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LELAND STANFORD JUNIOR UNIVERSITY

FIFTEENTH  
ANNUAL REGISTER  
1905-06

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"The beneficence of the Creator towards man on earth, and the possibilities of humanity, are one and the same."—LELAND STANFORD.

"A generous education is the birthright of every man and woman in America."

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STANFORD UNIVERSITY, CALIFORNIA  
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APRIL, 1906

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## OFFICE DIRECTORY\*

The office of the PRESIDENT is room 112.

The office of the REGISTRAR is room 116.

The office of the SECRETARY to the President is room 110.

The office of the TREASURER is room 250.

The office of the ASSOCIATE PROFESSOR OF HYGIENE is room 95.

The various Departmental offices are given in the SCHEDULE and in the DIRECTORY OF OFFICERS AND STUDENTS.

The University Post, Telegraph, and Telephone Office is *Stanford University, California*.

The University Railway Station and Express Office is *Palo Alto, California*.

Requests for *Registers*, blanks, and other printed matter, and inquiries regarding terms of admission, advanced standing, etc., should be addressed to *The Registrar, Stanford University, Cal.*

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[\*The rooms in the Inner Quadrangle are numbered consecutively, beginning at the left of the main entrance, ten numbers being allotted to each building. In the Outer Quadrangle forty numbers are allotted to each of the larger buildings and ten numbers to each one-story building, beginning with the Assembly Hall and number 120. The engineering buildings south of the Quadrangles begin with number 500. The Chemistry building is on the west avenue between the Quadrangles and the Museum.]

## UNIVERSITY CALENDAR

---

### 1905

Aug. 24 Thursday.....Entrance Examinations begin.  
 Aug. 29 Tuesday .....Registration of Matriculated Students.  
 Aug. 30 Wednesday ....Registration of New Students.  
 Aug. 31 Thursday .....Instruction begins.  
 Sept. 8 Friday .....Conferring of Degrees.  
 Nov. 30 Thursday ..... } Thanksgiving Recess.  
 Dec. 3 Sunday ..... }  
 Dec. 22 Friday .....First Semester ends.

### 1906

Jan. 5 Friday .....Entrance Examinations begin.  
 Jan. 9 Tuesday .....Registration for Second Semester.  
 Jan. 10 Wednesday ....Instruction begins.  
 Jan. 12 Friday .....Mid-Year Conferring of Degrees.  
 Feb. 22 Thursday .....Washington's Birthdáy.  
 Mar. 9 Friday .....Founder's Day.  
 Mar. 31 Saturday..... } Mid-Semester Recess.  
 April 8 Sunday..... }  
 May 14 Monday.....Memorial Day.  
 May 11-17 Fri.-Thur .....End-Semester Examinations.  
 May 18-19 Fri.-Sat.....Entrance Examinations in English.  
 May 20 Sunday .....Baccalaureate Sunday.  
 May 21 Monday .....Class Day.  
 May 22 Tuesday .....Alumni Day.  
 May 23 Wednesday.... Commencement.

Aug. 23 Thursday .....Entrance Examinations begin.  
 Aug. 28 Tuesday .....Registration of Matriculated Students.  
 Aug. 29 Wednesday.....Registration of New Students.  
 Aug. 30 Thursday.....Instruction begins.  
 Sept. 7 Friday.....Conferring of Degrees.  
 Nov. 29 Thursday..... } Thanksgiving Recess.  
 Dec. 2 Sunday ..... }  
 Dec. 13-19 Thur.-Wed...End-Semester Examinations

### 1907

Jan. 4 Friday .....Entrance Examinations begin.  
 Jan. 8 Tuesday .....Registration for Second Semester.  
 Mar. 30 Saturday.....Mid-Semester Recess begins.  
 May 22 Wednesday ....Commencement.

## ADMINISTRATIVE OFFICERS

---

### BOARD OF TRUSTEES

SAMUEL FRANKLIN LEIB, A. B., President,  
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Assistant Treasurer, Mills Building, San Francisco  
TIMOTHY HOPKINS, Mills Building, San Francisco  
THOMAS BARD MCFARLAND, A. B.,  
825 Market St., San Francisco  
GEORGE EDWARD GRAY, 1155 Bush St., San Francisco  
JOSEPH DONOHUE GRANT, A. B.,  
Bush and Sansome Sts., San Francisco  
LEON SLOSS, 645 Market St., San Francisco  
THOMAS WELTON STANFORD, Melbourne, Australia  
FRANK MILLER, Hotel Pendleton, San Francisco  
WHITELAW REID, A. M., LL. D., London, England  
WILLIAM BABCOCK, 306 California St., San Francisco  
CHARLES P. EELLS, A. B., 324 Pine St., San Francisco

### STANDING COMMITTEES OF THE TRUSTEES

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**University:** DAVIS, MCFARLAND, REID, GRANT, HOPKINS, EELLS,  
CROTHERS.

**Auditing, Organization, and Rules:** GRANT, DAVIS, REID,  
CROTHERS, MCFARLAND, SLOSS, EELLS.

**Museum:** SLOSS, HOPKINS, GRANT, MILLER, LATHROP.

**Memorial Church:** LATHROP, DAVIS, REID.



## Administrative Officers

7

### THE UNIVERSITY

**President:** DAVID STARR JORDAN.

**Vice-President:** JOHN CASPER BRANNER.

**Registrar:** ORRIN LESLIE ELLIOTT.

**Associate Librarian:** MELVIN GILBERT DODGE.

**Secretary to the President:** GEORGE ARCHIBALD CLARK.

---

### EXECUTIVE HEADS OF DEPARTMENTS

**Greek:** AUGUSTUS TABER MURRAY.

**Latin:** HENRY RUSHTON FAIRCLOUGH.

**Germanic Languages:** KARL G. RENDTORFF (acting).

**Romanic Languages:** JOHN ERNST MATZKE.

**English Philology:** EDWARD FLÜGEL.

**English Literature and Rhetoric:** MELVILLE BEST ANDERSON.

**Philosophy:** FRANK ANGELL (acting).

**Psychology:** FRANK ANGELL.

**Education:** ELLWOOD P. CUBBERLEY (acting).

**History:** EPHRAIM DOUGLAS ADAMS (acting).

**Economics and Social Science:** ALBERT CONSER WHITAKER  
(acting).

**Law:** NATHAN ABBOTT.

**Drawing:** ARTHUR BRIDGMAN CLARK (acting).

**Mathematics:** ROBERT EDGAR ALLARDICE.

**Applied Mathematics:** LEANDER MILLER HOSKINS.

**Physics:** FERNANDO SANFORD.

**Chemistry:** JOHN MAXSON STILLMAN.

**Botany:** GEORGE JAMES PEIRCE (acting).

**Systematic Botany and Forestry:** WILLIAM RUSSELL DUDLEY.

**Physiology and Histology:** OLIVER PEEBLES JENKINS.

**Hygiene:** WILLIAM FREEMAN SNOW (acting).

**Zoology:** CHARLES HENRY GILBERT.

**Entomology and Bionomics:** VERNON LYMAN KELLOGG.

**Geology and Mining:** JOHN CASPER BRANNER.

**Civil Engineering:** CHARLES DAVID MARX.

**Mechanical Engineering:** WILLIAM FREDERICK DURAND.

**Electrical Engineering:** HARRIS JOSEPH RYAN.

## STANDING COMMITTEES OF THE ACADEMIC COUNCIL

---

### ADVISORY BOARD

STILLMAN, chairman; MURRAY, secretary; ABBOTT, ANGELL, BRANNER, GILBERT, HOSKINS, C. D. MARX, SANFORD.

### ADMINISTRATIVE COMMITTEES

1. **Student Affairs:** GREEN, DURAND, LENOX, SHOW, PRICE.
2. **Athletics:** ANGELL, ADAMS, DURAND, SNOW, SEARLES.
3. **Public Exercises:** NEWCOMER, DUNIWAY, ALDEN, ROLFE, MORENO.
4. **Literary Contests:** DUNIWAY, ALDEN, WHITAKER, ELMORE, BASSETT.
5. **Public Health:** SNOW, GILBERT, DURAND.
6. **Delinquent Scholarship:** GILBERT, ELLIOTT, PEIRCE, MURRAY, HOSKINS.
7. **Public Entertainments:** YOUNG, C. D. MARX, KELLOGG, SEARLES, SEWARD.

### ACADEMIC COMMITTEES

1. **Executive Committee:** JORDAN, BRANNER, ELLIOTT, ADAMS, CLARK, FAIRCLOUGH, FRANKLIN, GILBERT, G. H. MARX, PEIRCE, ROLFE, SANFORD, SHOW.
2. **Admission and Advanced Standing:** ELLIOTT, SHOW, MATZKE, HOSKINS, CUBBERLEY.
3. **Registration:** ELLIOTT, SNOW, COOPER, ELMORE, SEWARD.
4. **Graduation:** ELLIOTT, JENKINS, PRICE, JOHNSTON, ANDERSON.
5. **Schedule and Examinations:** ELLIOTT, CLARK, MCFARLAND, G. H. MARX, ROLFE.
6. **Graduate Study:** MURRAY, DUDLEY, ANGELL, HOSKINS, MATZKE.
7. **Library:** STILLMAN, C. D. MARX, KELLOGG, FAIRCLOUGH, ADAMS.
8. **University Publications:** FAIRCLOUGH, DUNIWAY, SMITH, ANDERSON, MILLIS.
9. **Recommendation of Teachers:** ELLIOTT, CUBBERLEY, FAIRCLOUGH, SANFORD, SHOW.

## FACULTY AND OTHER OFFICERS\*

---

DAVID STARR JORDAN, President of the University.

Kazmin House, Serra Ave.

M. S., Cornell University, 1872; M. D., Indiana Medical College, 1875; Ph. D., Butler University, 1878; LL. D., Cornell University, 1886, Johns Hopkins University, 1902. Instructor in Botany, Cornell University, 1871-72; Professor of Natural History, Lombard University, 1872-73; Principal of Appleton (Wis.) Collegiate Institute, 1873-74; Student and afterward Lecturer in Marine Botany, Anderson School at Penikese, 1874; Teacher of Natural History, Indianapolis High School, 1874-75; Professor of Biology, Butler University, 1875-79; Assistant to the U. S. Fish Commission, 1877-91; Professor of Zoology, Indiana University, 1879-85; President of the Indiana University, 1885-91; President of the California Academy of Sciences, 1896-98, 1901-03; U. S. Commissioner in charge of Fur Seal Investigations, 1896-98, of Salmon Investigations, 1904.

JOHN CASPER BRANNER, Vice-President and Professor  
of Geology. 13 Alvarado Row.

B. S., Cornell University, 1882; Ph. D., Indiana University, 1885; LL. D., University of Arkansas, 1897. Assistant Geologist, Imperial Geological Survey of Brazil, 1875-78; Special Botanist in South America, 1880-81; Special Agent of the U. S. Department of Agriculture for Investigating Cotton and the Insects affecting it in Brazil, 1882-83; Topographical Geologist of the Geological Survey of Pennsylvania, Anthracite District, 1883-85; Professor of Geology, Indiana University, 1885-91; State Geologist of Arkansas, 1887-92.

OLIVER PEEBLES JENKINS, Professor of Physiology  
and Histology. 3 Lasuen St.

A. B. Moore's Hill College, 1869, A. M., 1872; M. S., Indiana University, 1886, Ph. D., 1889. Professor of Natural Science, Moore's Hill College, 1876-82; Professor of Natural Science, Indiana State Normal School, 1883-86; Professor of Biology, De Pauw University, 1886-91.

MELVILLE BEST ANDERSON, Professor of English Lit-  
erature. Menlo Park.

A. M., Butler University, 1877; Professor of Modern Languages, Butler University, 1877-80; Professor of English Literature, Knox College, 1881-86; Professor of Literature and History, Purdue University, 1886-87; Professor of the English Language and Literature, University of Iowa, 1887-91.

JOHN MAXSON STILLMAN, Professor of Chemistry.  
2 Alvarado Row.

Ph. B., University of California, 1874, Ph. D., 1885. Assistant in Chemistry, University of California, 1873-75; Student in Chemistry, Strassburg and Würzburg, 1875-76; Instructor in Organic and General Chemistry, University of California, 1876-82; Chemist of the Boston and American Sugar Refining Company, 1882-92.

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\* Arranged in groups in the order of seniority of appointment. For Alphabetical Directory of Officers, see p. 234.

**FERNANDO SANFORD, Professor of Physics.**

450 Kingsley Ave.

B. S., Carthage College, 1879, M. S., 1882. Student, University of Berlin, 1886-88; Professor of Physical Science, Mt. Morris College, 1879-82; Superintendent of Schools, Ogle County, Ill., 1882-86; Instructor in Physics and Chemistry, Englewood (Ill.) High School, 1888-90; Professor of Physical Science, Lake Forest University, 1890-91.

**CHARLES DAVID MARX, Professor of Civil Engineering.**

357 Kingsley Ave.

B. C. E., Cornell University, 1878; C. E., Karlsruhe Polytechnicum, 1881. Instructor in Civil Engineering, Karlsruhe Polytechnicum, 1880-81; U. S. Assistant Engineer, Missouri River Improvement, 1882-84; Assistant Professor of Civil Engineering, Cornell University, 1884-90; Professor of Civil Engineering, University of Wisconsin, 1890-91.

**CHARLES HENRY GILBERT, Professor of Zoology.**

433 Melville Ave.

B. S., Butler University, 1879; M. S., Indiana University, 1882, Ph. D., 1883. Assistant in Natural Sciences and Modern Languages, Indiana University, 1880-84; Professor of Natural History, University of Cincinnati, 1884-88; Professor of Zoology, Indiana University, 1888-91; Assistant to the U. S. Fish Commission, 1880-91.

**†DOUGLAS HOUGHTON CAMPBELL, Professor of Botany.**

[In India.]

Ph. M., University of Michigan, 1882, Ph. D., 1886. Teacher of Biology, Detroit High School, 1882-86; Student at Bonn, Tübingen, and Berlin, 1886-88; Professor of Botany, Indiana University, 1888-91.

**†EWALD FLÜGEL, Professor of English Philology.**

[In Europe.]

Ph. D., University of Leipzig, 1886. Student, Universities of Freiburg and Leipzig, 1882-88; Privat Dozent, University of Leipzig, 1888-92.

**CHARLES BENJAMIN WING, Professor of Structural Engineering.**

345 Lincoln Ave.

C. E., Cornell University, 1886. Fellow in Civil Engineering, Cornell University, 1886-87, Instructor, 1887-90, Assistant Professor, 1890-91; Engineer, Pompton (N. J.) Powder Co., 1887, Phoenix Powder Co., Farmingdale, N. Y., 1888; Assistant Engineer, Berlin (Conn.) Iron Bridge Co., 1889-90; Professor of Bridge and Hydraulic Engineering, University of Wisconsin, 1891-92.

**FRANK ANGELL, Professor of Psychology.**

1146 Waverley St.

B. S., University of Vermont, 1878; Ph. D., University of Leipzig, 1891; L. H. D., University of Vermont, 1892. Teacher in Washington (D. C.) High School, 1880-87; Assistant Professor of Psychology, Cornell University, 1891-92.

**LEANDER MILLER HOSKINS, Professor of Applied Mathematics.**

365 Lincoln Ave.

B. C. E. and B. S., University of Wisconsin, 1883, M. S., 1885, C. E., 1887. Instructor in Engineering, University of Wisconsin, 1885-89, Assistant Professor of Mechanics, 1889-91, Professor of Theoretical and Applied Mechanics, 1891-92.

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† Absent on leave, 1905-06.

ROBERT EDGAR ALLARDICE, Professor of Mathematics.  
19 Salvatierra St.

A. M., University of Edinburg, 1882. Baxter Scholar in Mathematics, University of Edinburg, 1882-83, Drummond Scholar in Mathematics, 1883-84; Assistant Professor of Mathematics, University of Edinburg, 1883-92.

WILLIAM RUSSELL DUDLEY, Professor of Botany.  
21 Lasuen St.

B. S., Cornell University, 1874, M. S., 1876. Student, Summer School, Penikese, 1874, Harvard University, 1876, Universities of Strassburg and Berlin, 1887-88; Instructor in Botany, Cornell University, 1872-76, Assistant Professor, 1876-92.

AUGUSTUS TABER MURRAY, Professor of Greek.  
1019 Bryant St.

A. B., Haverford College, 1885; Ph. D., Johns Hopkins University, 1890. Fellow in Johns Hopkins University, 1887-88; Professor of Greek, Earlham College, 1888-90; Student, Universities of Leipzig and Berlin, 1890-91; Professor of Greek, Colorado College, 1891-92.

NATHAN ABBOTT, Professor of Law.  
318 Lincoln Ave.

A. B., Yale University, 1877; LL. B., Boston University, 1893. Professor of Law, University of Michigan, 1891-92; Professor of Law, Northwestern University, 1892-94.

JOHN ERNST MATZKE, Professor of Romanic Languages.  
1211 Bryant St.

A. B., Hope College, 1882; Ph. D., Johns Hopkins University, 1888. Professor of French, Bowdoin College, 1889-90; Professor of the Romanic Languages, Indiana University, 1890-91; Associate in the Romanic Languages, Johns Hopkins University, 1891-93.

†JAMES OWEN GRIFFIN, Professor of German.  
[In Europe.]

Graduate of the Pennsylvania State Normal School, 1878. Teacher in Pennsylvania State Normal School, 1873-74; Principal, Unadilla (N. Y.) Academy, 1874-79; Student, University of Göttingen, 1879-80; Principal of Delaware Academy (Delhi, N. Y.), 1880-85; Instructor in German, Cornell University, 1885-91, Registrar, 1890-91.

RUFUS LOT GREEN, Professor of Mathematics.  
13 Salvatierra St.

B. S., Indiana University, 1885, A. M., 1890. Instructor in Mathematics, Indiana University, 1885-86; Student, Johns Hopkins University, 1886-87; Professor of Pure Mathematics, Indiana University, 1887-93.

ARLEY BARTHOW SHOW, Professor of Mediaeval History.  
353 Melville Ave.

A. B., Doane College, 1882; Graduate, Andover Theological Seminary, 1885; A. M., Doane College, 1892. Pastor, Congregational Church, Waco, Neb., 1885-87; Professor of History and English Literature, Doane College, 1887-92; Student, University of Leipzig, 1900-01; Lecturer on History of the Early Church, Pacific Theological Seminary, Oakland, 1905-06.

† Absent on leave, second semester, 1905-06.

**ORRIN LESLIE ELLIOTT, Registrar,** 12 Alvarado Row.

Ph. B., Cornell University, 1885, Ph. D., 1890. Fellow in History and Political Science, Cornell University, 1885-86, Instructor in English, 1886-91, Assistant Registrar and President's Secretary, 1890-91.

**VERNON LYMAN KELLOGG, Professor of Entomology and Lecturer in Bionomics.** 19 Salvatierra St.

B. S., University of Kansas, 1889, M. S., 1892. Student, Cornell University, 1891, University of Leipzig, 1893; Assistant Professor of Entomology, University of Kansas, 1890-93, Associate Professor, 1893-94.

**JAMES PERRIN SMITH, Professor of Paleontology.** 1335 Cowper St.

A. M., Vanderbilt University, 1886; Ph. D., University of Göttingen; 1892. Assistant Geologist and Chemist, Arkansas Geological Survey, 1887-90.

**LIONEL REMOND LENOX, Professor of Analytical Chemistry.** Castro Station.

Ph. B., Columbia College, 1888. Assistant Chemist, Bethlehem Iron Co., 1887; Instructor in Chemistry, Lehigh University, 1888-91; Chemist, Ordnance Department, U. S. N., Washington, D. C., 1891-92.

**HENRY RUSHTON FAIRCLOUGH, Professor of Latin.** 6 Alvarado Row.

A. B., University of Toronto, 1888, A. M., 1886; Ph. D., Johns Hopkins University, 1896. Fellow in Classics, University College, Toronto, 1883-84; Classical and English Master, Brockville High School, 1884-86; Graduate Scholar, Johns Hopkins University, 1886-87, Fellow, 1887; Lecturer in Greek and Ancient History, University College, Toronto, 1887-93.

**†MAX FARRAND, Professor of History.** [Ithaca, N. Y.]

A. B., Princeton University, 1892, A. M., 1893, Ph. D., 1896. Boudinot Fellow in History, Princeton University, 1892-93, Fellow in Social Science, 1893-94; Student, Universities of Leipzig and Heidelberg, 1894-96; Instructor in History, Wesleyan University, 1896-98, Associate Professor, 1898-99, Professor, 1899-1901.

**WILLIAM FREDERICK DURAND, Professor of Mechanical Engineering.** 2 San Juan St.

Graduate U. S. Naval Academy, 1880; Ph. D., Lafayette College, 1888. Engineer Corps, U. S. Navy, 1880-87; Special Duty as Assistant Professor of Mechanical Engineering, Lafayette College, 1883-85, Worcester Polytechnic Institute, 1887; Professor of Mechanics and Superintendent of Mechanical Department, Michigan State Agricultural and Mechanical College, 1887-91; Professor of Marine Engineering and Principal Graduate School of Naval Architecture and Marine Engineering, Cornell University, 1891-1904.

**HARRIS JOSEPH RYAN, Professor of Electrical Engineering.** 2 Salvatierra St.

M. E., Cornell University, 1887. With Western Engineering Co., Lincoln, Neb., 1887-88; Instructor in Physics, Cornell University, 1888-89, Assistant Professor of Electrical Engineering, 1889-92, Associate Professor, 1892-95, Professor, 1895-1905; Judge, Board of Awards, World's Fair, Chicago, 1893; U. S. Government Delegate, International Electrical Congress, St. Louis Exposition, 1904.

† Absent on leave, 1905-06.

**\*GEORGE HEMPL, Professor of Germanic Philology.**

[Ann Arbor, Mich.]

A. B., University of Michigan, 1879; Ph. D., University of Jena, 1889; LL. D., University of Wisconsin, 1904. Principal Saginaw (Mich.) H. S., 1879-82, La Porte (Ind.) H. S., 1882-84; Instructor in German, Johns Hopkins University, 1884-86; Student, Universities of Göttingen, Tübingen, Strassburg, Jena, and Berlin, 1886-89; Assistant Professor of English, University of Michigan, 1889-93, Junior Professor, 1893-97, Professor of English Philology and General Linguistics, 1897-1906.

**WILLIAM JAMES, Acting Professor of Philosophy.**

15 Salvatierra St.

M. D., Harvard University, 1870; LL. D., Princeton and Edinburgh; Ph. D. and Litt. D., Padua. Professor of Philosophy, Harvard University, since 1872.

**†ALPHONSO GERALD NEWCOMBER, Associate Professor of English.**

[In Europe.]

A. B., University of Michigan, 1887; A. M., Cornell University, 1888. Fellow in Classics, Cornell University, 1887-88; Principal, Mt. Morris (Ill.) H. S., 1888-89; Instructor in Latin and French, Knox College, 1889-91.

**ARTHUR BRIDGMAN CLARK, Associate Professor of Drawing.**

College Terrace.

B. Ar., Syracuse University, 1888, M. Ar., 1891. Director of Trade Schools and Instructor in Drawing, New York State Reformatory, Elmira, N. Y., 1888-89; Instructor in Architecture, Syracuse University, 1889-92.

**FRANK MACE MCFARLAND, Associate Professor of History.**

943 Scott St.

Ph. B., De Pauw University, 1889; A. M., Leland Stanford Jr. University, 1893; Ph. D., University of Würzburg, 1896. Assistant in Biology, De Pauw University, 1888-89; Professor of Biology, Olivet College, 1889-92; Student, Würzburg, Zürich, and Naples, 1894-96.

**GEORGE CLINTON PRICE, Associate Professor of Zoology.**

5 Salvatierra St.

B. S., De Pauw University, 1890; Ph. D., Leland Stanford Jr. University, 1897. Student in Biology, Johns Hopkins University, 1890-92. University of Munich, 1895-96.

**‡JOHN CHARLES LOUNSBURY FISH, Associate Professor of Civil Engineering.**

[Limestone, Pa.]

C. E., Cornell University, 1892. Instructor in Civil Engineering, Cornell University, 1892-93.

**ELLWOOD P. CUBBERLEY, Associate Professor of Education.**

8 Alvarado Row.

A. B., Indiana University, 1891; A. M., Columbia University, 1902, Ph. D., 1905. Instructor in Science, Ridgeville College (Ind.), 1891; Professor of Physical Science, Vincennes University (Ind.), 1891-93, President, 1893-96; Superintendent of City Schools, San Diego, Cal., 1896-98.

**GUIDO HUGO MARX, Associate Professor of Mechanical Engineering.**

356 Lincoln Ave.

M. E., Cornell University, 1893. With Gleason Tool Co., Rochester, N. Y., 1893-94; with Bement, Miles & Co., Philadelphia, 1894-95.

\* Beginning January, 1907.

† Absent on leave, second semester, 1905-06.

‡ Absent on leave, 1905-06.

CLYDE AUGUSTUS DUNIWAY, Associate Professor of History. 5 Alvarado Row.

A. B., Cornell University, 1892; A. M., Harvard University, 1894, Ph. D., 1897. Instructor in History, Harvard University and Radcliffe College, 1896-97.

GEORGE ARCHIBALD CLARK, Secretary to the President. 7 Alvarado Row.

B. L., University of Minnesota, 1891. Secretary, U. S. Fur Seal Commission, 1896-98.

GEORGE JAMES PEIRCE, Associate Professor of Botany and Plant Physiology. 943 Bryant St.

B. S., Harvard University, 1890; Ph. D., University of Leipzig, 1894. Assistant in Botany, Harvard University and Radcliffe College, 1890-92; Parker Fellow in Harvard University, studying in Bonn, Leipzig, and Munich, 1892-94; Assistant Professor of Botany, Indiana University, 1895-97.

†HERMAN DE CLERCQ STEARNS, Associate Professor of Physics. [Los Angeles, Cal.]

A. B., Leland Stanford Jr. University, 1892, A. M., 1893. Student, University of Berlin, 1897-98.

OLIVER MARTIN JOHNSTON, Associate Professor of Romanic Languages. 4 Alvarado Row.

A. B., Mississippi College, 1890, A. M., 1892; Ph. D., Johns Hopkins University, 1896. Principal, Preparatory Department, Mississippi College, 1890-91, Professor of English and History, 1891-93; Fellow in Johns Hopkins University, 1895-96; Lecturer in French Philology, Bryn Mawr College, 1896-97.

STEWART WOODFORD YOUNG, Associate Professor of Chemistry. 1146 Waverly St.

B. S. Cornell University, 1890. Assistant in Chemistry, Cornell University, 1890-91; Instructor in Chemistry, Swarthmore College, 1891-93.

MELVIN GILBERT DODGE, Associate Librarian.

11 Alvarado Row.

A. B., Hamilton College, 1890, A. M., 1894. Librarian, Hamilton College, 1892-1901.

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HARRIETTE MILES, Supervisor Serials. 17 Salvatierra St.

Graduate, Illinois State Library School, 1901. Student University of Kansas, 1895, 1898-99.

HELEN BINNINGER SUTLIFF, Cataloguer. 1116 Ramona St.

A. B., University of Kansas, 1890; Head Cataloguer, University of Kansas Library, 1891-1905; Cataloguer in Columbia University Library, Summer, 1901.

JOHN EDWARD GOODWIN, Supervisor Stacks and Loans. 14 Salvatierra St.

A. B., University of Wisconsin, 1901; Graduate, New York State Library School, 1905. Classifier and Cataloguer, Madison (Wis.) Free Library, 1901-04; Assistant, Legislative Reference Department, Wisconsin Free Library Commission, 1903.

BELLE HEBER THOMPSON, Chief Loan Desk Assistant. 909 Alma St.

**Assistants**

JOHN FRANKLIN BARCUS.	College Terrace.
MILDRED IRENE CROSIER.	11 Salvatierra St.
GEORGE ETHELBERT DOLE.	11 Lasuen St.
ELIZABETH HADDEN, Cataloguer.	1157 Ramona St.
ANNA GERTRUDE HALL.	8 Roble Hall.
ALFRED LAWRENCE KOCHER.	San Jose.
LETITIA PATTERSON.	431 University Ave.
A. B., Leland Stanford Jr. University, 1901.	
MAIDA ROSSITER.	465 Melville Ave.
A. B., Cornell University, 1908.	
JOHN ELMER STEWART.	118 Encina Hall.
SETH BLAINE THOMPSON.	14 Lasuen St.
WINIFRED WOOD.	107 Cowper St.
A. B., Leland Stanford Jr. University, 1904.	
ELMER ELLIS YOUNG.	99 Encina Hall.

**Law Library**

GILBERT DENISON BOALT,	151 Encina Hall.
A. B., Leland Stanford Jr. University, 1908.	
HARRY LUMMIS DEARING.	19 Encina Hall.
EMMET CLOYD RITTENHOUSE.	53 Encina Hall.
A. B., Leland Stanford Jr. University, 1904.	

**MEMORIAL CHURCH**

BENJAMIN COLMAN BLODGETT, Organist.	251 Emerson St.
Mus. Doc. Oxon., 1877. Student, University and Conservatory of Music, Leipzig, 1858-61; Principal of Music School, Pittsfield, Mass., 1865-78; Director of Music, Smith College, 1878-1903; Honorary Fellow, London Society of Arts and Letters, 1880; Member, Wagner Musik-Verein, Bayreuth, 1888, New York Art Club, 1890.	

**LELAND STANFORD JUNIOR MUSEUM**

HARRY C. PETERSON, Curator.	672 Homer Ave.
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**ROBLE HALL**

LUCRETIA HOUSTON LANKTREE, Matron.	Roble Hall.
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## BUSINESS OFFICE

CHARLES GARDNER LATHROP, Treasurer and Business  
Manager. Alta Vista.

PRICE, WATERHOUSE & CO., Auditors.  
Mills Building, San Francisco.

DAVID MONASCH, Purchasing Agent.  
Union Trust Bldg., San Francisco.

A. C. LASSEN, Cashier. Encina Hall.

SAMUEL H. RICH, Bookkeeper and Voucher Clerk.  
1158 Ellis St., San Francisco.

R. H. WORSLEY, Bookkeeper. 255 Lytton Ave.

FANNIE HADDEN, Stenographer. 1157 Ramona St.

PHILIP QUINN ATKINSON, Custodian.  
Stanford University.

CHARLES EDWARD HODGES, Resident Architect.  
Pine Cottage.

With N. S. Joseph & Pearson, Architects, London, 1884-88; Student,  
Westminster and South Kensington Architect Schools, 1884-88;  
Draughtsman to Shepley, Rutan & Coolidge, Architects, 1888-91;  
Member, American Institute of Architects, Washington, D. C., Sep-  
tember, 1900.

C. P. HUGHES, Chief Engineer. Stanford University.

DAVID H. HOLMES, Chief Electrician.  
Stanford University.

GEORGE ADDERSON, Overseer of Buildings.  
Encina Hall.

F. A. STEVENS, Foreman Mechanician Shop.  
344 Emerson St.

T. B. SCOTT, Storekeeper of the Chemical Laboratory.  
Mayfield.

M. H. DORGAN, Chief Plumber. Mayfield.

CHARLES F. MOORE, Plumber. 417 Emerson St.

CHARLES C. WALLEY, Chief Carpenter. Mayfield.

CHARLES F. MILLER, Chief Gardener. 315 Lytton Ave.

JEREMIAH CROWLEY, Foreman of the Farm. Mayfield.

P. J. TULLEY, Painter. Mayfield.

ROBERT W. BEALE, Sexton Memorial Church.  
Palo Alto Hotel.

J. MCGLYNN, Engineer Science Building. Mayfield.

A. A. QUINN, Clerk Encina Hall. 553 Forest Ave.

EDWARD SOULE, Foreman Manual Training.  
633 Lytton Ave.

# ORGANIZATION

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## Foundation

The founding, at Palo Alto, of "a university for both sexes, with the colleges, schools, seminaries of learning, mechanical institutes, museums, galleries of art, and all other things necessary and appropriate to a university of high degree," was determined upon by the Hon. Leland Stanford and Jane Lathrop Stanford, in 1884. In March of the year following the Legislature of California passed an Act providing for the administration of trust funds in connection with institutions of learning. November 14, 1885, the Grant of Endowment was publicly made in accordance with this Act, and on the same day the Board of Trustees held its first meeting, in San Francisco. The work of construction was at once begun, and the cornerstone laid May 14, 1887, the nineteenth anniversary of the birth of Leland Stanford, Junior. The University was formally opened to students October 1, 1891.

## Name and Purpose

"Since the idea of establishing an institution of this kind, for the benefit of mankind, came directly and largely from our son and only child, Leland, and in the belief that had he been spared to advise as to the disposition of our estate, he would have desired the devotion of a large portion thereof to this purpose, we will that for all time to come the institution hereby founded shall bear his name, and shall be known as The Leland Stanford Junior University."

The object of the University is "to qualify students for personal success and direct usefulness in life"; its purposes, "to promote the public welfare by exercising an influence in behalf of humanity and civilization, teaching the blessings of liberty regulated by law, and inculcating love and reverence for the great principles of government as derived from the inalienable rights of man to life, liberty, and the pursuit of happiness."

### Location

The University is located on the Palo Alto estate in the Santa Clara Valley, thirty-three miles southeast of San Francisco, on the Coast Division of the Southern Pacific Railway. The estate consists of about nine thousand acres, partly level and partly rising into the foothills of the Santa Cruz Range. The Bay of San Francisco lies about three miles east of the University buildings, and across the bay the Monte Diablo Range rises to the height of over four thousand feet. The Lick Observatory, crowning Mount Hamilton, the highest of the range, is plainly visible. To the southwest, between the valley and the ocean, is the heavily wooded Santa Cruz Range, two thousand to four thousand feet in height.

The Santa Clara Valley is one of the most attractive portions of the State in climate, in natural beauty, and in the fertility and adaptiveness of its soil to all the varied fruits of California. The characteristics of the climate are its evenness of temperature, its pure and bracing air, and its freedom alike from the fogs and harsh winds of the coast and from the oppressive summer heat of the interior valleys. In winter the mercury rarely falls below 30 degrees, and the average midday temperature is about 55 degrees; in summer the average midday temperature is between 70 degrees and 80 degrees, while the nights are always cool. The rainfall, of about fifteen inches, is chiefly confined to the months from December to April, inclusive.

### Endowment

The landed endowment of the University, in addition to the Palo Alto estate, consists of the Vina tract, in Tehama County, of fifty-three thousand acres; the Gridley tract, in Butte County, of eighteen thousand acres; various tracts of minor importance; and the Stanford residence in San Francisco. The main endowment of the University, consisting of the greater part of the Stanford estate, was deeded to the University by Mrs. Stanford, in 1903.

### Buildings

The central group of buildings, constituting two quadrangles, the one surrounding the other, is an adaptation of the



Mission Architecture and reproduces on an imposing scale the open arches, long colonnades, and red tile roofing of the old Spanish Missions of California. The **INNER QUADRANGLE** consists of twelve one-story buildings and the Memorial Church, connected by a continuous open arcade, and surrounding a court 586 feet long by 246 feet wide, or three and a quarter acres. The buildings are of buff sandstone, somewhat varied in color, the stonework of broken ashlar, with rough rock face, and the roofs covered with red tile.

The fourteen buildings of the **OUTER QUADRANGLE** are constructed of the same material and in the same general style as the inner quadrangle. They are also connected on the outer side by open arcades extending entirely around the quadrangle. The extreme length of the outer quadrangle is 894 feet.

The **MEMORIAL ARCH**, forming the central feature of the principal façade of the University, is 100 feet in height, 90 feet wide, and 34 feet in depth. The archway is 44 feet wide and 51 feet high. A sculptured frieze twelve feet in height, and representing the "Progress of Civilization in America," surrounds the arch. Above this frieze is a corbelled arch course terminating in the parapet wall four feet above the flat fire-proof roof. A circular iron stairway leads from the ground level to the roof.

The **ASSEMBLY HALL**, the first building east of the Memorial Arch, has a frontage of 108 feet, and a seating capacity of seventeen hundred. The stage is 36 x 28 feet, with dressing-rooms on each side. The stage and auditorium are lighted by ornamental dome skylights.

The Thomas Welton Stanford **LIBRARY BUILDING** occupies the central portion of the eastern half of the façade in the Outer Quadrangle. It has a frontage of 160 feet, and the extreme width, including ell, is 158 feet. The stack room, which forms the ell, is 70 x 74 feet. The main reading-room, lighted by a circular dome of stained glass forty feet in diameter, has a seating capacity of two hundred and twenty. On the first floor are also the cataloguing-room, reference libraries, and offices; on the second floor are six seminary rooms.

A new **LIBRARY BUILDING**, situated between the Quadrangles and the Gymnasium, and directly opposite the Chemistry

Building, was begun in 1904. The ground dimensions are 304 feet in length, with a width, through the stack room, of 200 feet. The semi-circular stack room has a diameter of 132 feet. In height the building will be three stories and basement, surmounted by a glass dome 74 feet in diameter, the total height from the ground line to the top of the dome being 141 feet. Entrances at each end of the building will lead into the first floor. In the wings of this floor will be rooms for the librarian, for accessioning and cataloguing, general reference and periodical rooms; while in the central portion, directly beneath the great dome, will be located the general reading and study room, which will be circular in form. Directly back of this, in the semi-circular addition, will be the great stack room, the stacks radiating away from the delivery desk. The second floor will be devoted to seminary rooms and special libraries belonging to the various departments.

The LELAND STANFORD JUNIOR MUSEUM, a series of connected buildings in quadrangular form, covering a ground area of 665 x 332 feet, is situated a quarter of a mile from the quadrangles, and on the west side of the Palo Alto Avenue. The museum contains the archaeological and art collections of the University.

The CHEMISTRY BUILDING is located between the Quadrangles and the Museum. It consists of two separate structures—the main Chemistry Building and the Assaying Laboratory. The main building is 235 feet in length and 100 feet in width at the wings, and consists of two stories with basement and attic. The Assaying Laboratory is a one-story building, 115 x 30 feet, in the rear of the main building, and separated from it by an inclosed court.

Behind the central quadrangles are located the workshops of the engineering departments, experimental laboratories, power-houses, etc.

The dormitories are east and west of the quadrangles. ENCINA HALL, for young men, is at the east, and occupies a ground area of 312 x 150 feet. It is four stories high, built of the same material as the quadrangle, and decorated with end arcades, a central arched porch, and mosaic work. It is provided with electric lights, hot and cold water, steam heat, suitable furniture, bathrooms on each floor, and has accommodations for three hundred students. ROBLE HALL for young

women, is at the west. It is of concrete, and will accommodate one hundred students. MADROÑO HALL is a frame building, at present leased to private parties, but receiving only women students. It will accommodate about thirty students.

ENCINA GYMNASIUM and ROBLE GYMNASIUM are substantial frame buildings, equipped with the necessary apparatus and appliances for physical training. A new Gymnasium for men was begun in 1902.

The UNIVERSITY INN is a frame building, just east of the quadrangles. It is intended primarily as a University commons for students living on the campus.

The grounds immediately about the University have been reserved, in part for experimental and ornamental purposes, and in part as residence sites for members of the Faculty and others who may desire to live on the University campus.

#### Scientific Collections

It is intended to bring together in the museums of the University a full representation of the natural history and mineral products of California, collections of all books, pamphlets, photographs, and maps bearing upon the early history of the West, and full collections of Indian antiquities and illustrations of aboriginal life. It is desired to receive donations from all persons who are interested in the work and who have material of value to the museums. Collections sent in this way will be carefully labeled and preserved, and the name of the donor will be kept on record. Messrs. Wells, Fargo & Co. will transport such gifts to the University free of charge, in shipments of fifty pounds or less, from railroad points in California, Oregon, and Nevada.

#### Trustees

The general management and control of the institution is vested in a Board of Trustees originally numbering twenty-four and chosen for life. By a modification of the Founding Grant, effected in 1899, the number of trustees was reduced to fifteen, with future elections for a term of ten years. The Board of Trustees fills all vacancies, elections being by ballot. The Founding Grant directs that "the Board of Trustees shall annually report all their proceedings to the person,

who, for the time being, shall fill the office of Governor of the State of California, and shall accompany such report with a full account of their financial operations for the preceding year, and with a statement of the financial affairs of the institution."

#### The University Faculty

The power and authority of the University Faculty is vested in the Academic Council, consisting of the President of the University, the professors and associate professors, the librarian, the registrar, such assistant professors as have been upon the roll of the faculty for three years, whether as assistant professors or instructors, and such other officers of the University or members of the teaching staff as the Academic Council may, with the assent of the Board of Trustees, determine.

All general University regulations, statutes, and rules as to matters within the province of the faculty, must be initiated in and passed by the Academic Council. The Academic Council has general power and responsibility for the internal administration of the University, subject to express provisions contained in the Articles of Organization respecting the methods of exercising such powers through the President of the University, the Advisory Board, the Standing Committees, and the Department Faculties.

The Advisory Board consists of nine members of the rank of professor, one from each of the five department groups, and four chosen without reference to groups. All executive acts of general importance, such as recommendations for appointments, promotions, and dismissals, for the creation of new departments or chairs, etc., must be submitted by the President to the Advisory Board. The Advisory Board is also privileged to make such recommendations to the President, regarding policy, as it may decide by vote to be expedient, but no recommendations for appointments, promotions, or dismissals, may originate with the Advisory Board.

The Executive Committee of the Academic Council consists of the President, Vice-President, Registrar, and two members from each department group elected by the Academic Council. The Executive Committee appoints the Academic Committees of the Council and formulates the duties

and controls the policy of Administrative and Academic Committees.

The Standing Administrative Committees of the Council are appointed by the President subject to the approval of the Advisory Board.

The Department Faculties consist of the professors, associate professors, assistant professors, and instructors in the several departments, but only members of the Academic Council have the right to vote. A Department Faculty has direction of the work of instruction in the department and of the internal administration of the department, subject only to such control as is vested in the Board of Trustees, the President of the University, or the Academic Council. The Executive Head of the Department Faculty is designated by the President with the approval of the Advisory Board and of the Board of Trustees.

#### Departments

The work of the University embraces the following departments, divided into groups for the purpose of elections to the Advisory Board and Executive Committee, as indicated:

(1) Greek, Latin, Germanic Languages, Romanic Languages, English Literature and Rhetoric, English Philology; (2) Botany, Systematic Botany and Forestry, Physiology and Histology, Hygiene, Entomology and Bionomics, Geology and Mining; (3) Psychology, Mathematics, Physics, Chemistry; (4) Philosophy, Education, History, Economics and Social Science, Law; (5) Drawing, Applied Mathematics, Civil Engineering, Mechanical Engineering, Electrical Engineering.

#### Conduct of Students

In the government of the University the largest liberty consistent with good work and good order is allowed. Students are expected to show both within and without the University such respect for order, morality, personal honor, and the rights of others as is demanded of good citizens. Failure to do this will be sufficient cause for removal from the University.

The primary purpose of the University, as set forth by its founders, is to train young men and young women "for personal success and direct usefulness in life." "Success" and "usefulness," as here understood, involve character and effectiveness; and the resources of the University are directed

toward the development of these qualities, so that every graduate may be prepared to do some useful thing honestly and effectively. Each student, therefore, is expected and encouraged to work toward some definite end in the choice of his studies. Students unable or unwilling to do serious work, looking toward a definite end, are not welcomed and will not be retained in the University.

#### Student Organizations

The general direction of student interests, including athletics, musical organizations, intercollegiate debating, etc., is intrusted to the Associated Students. Numerous general student organizations have been formed for mutual assistance and improvement in various lines. The Young Men's Christian Association and the Young Women's Christian Association hold devotional meetings and carry on courses of Bible Study throughout the year. During the opening week of the first semester the Associations maintain an Information Bureau for the accommodation of new students. In conjunction with the Faculty Committee on Public Health, the Associations compile each year a list of rooming and boarding-houses which have been inspected and approved; they also manage the Student Employment Bureau. Two college journals, the *Daily Palo Alto* and *Sequoia*, are published by the Associated Students. The *Chaparral* is published twice a month, under the auspices of the Press Association. The *Quad* is an annual, published by the Junior Class. The *Alumnus* is published monthly by the Alumni Association.

#### The Marine Biological Laboratory

The Marine Biological Laboratory, founded by the liberality of Mr. Timothy Hopkins, and located at Pacific Grove, on the Bay of Monterey, is a branch of the biological work of the University.

# ADMISSION TO THE UNIVERSITY

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## I. TO UNDERGRADUATE STANDING

Candidates must be at least *sixteen* years of age. They must present certificates of good moral character, and if from other colleges or universities, must bring letters of honorable dismissal.

Preparation for undergraduate standing implies the completion of a full four years' high school course, or its equivalent.

*Fifteen* units are required for full undergraduate standing, each unit representing one full year's work in the high school, with daily recitations, two laboratory periods being regarded as the equivalent of one recitation period. These fifteen units may be made up of English Composition (two units) and such other subjects (aggregating thirteen units) as may be selected by the candidate from the list given below, except that subject 12 may not be offered with either subject 10 or subject 11.

### ENTRANCE SUBJECTS

- |                               |                                     |
|-------------------------------|-------------------------------------|
| 1. English Composition (2*)   | 15. Mediæval and Modern History (1) |
| 2. English Literature (1, 2½) | 16. English History (1)             |
| 3. Algebra (1½ to 3)          | 17. American History (1)            |
| 4. Plane Geometry (1)         | 18. Spanish (2, 3)                  |
| 5. Solid Geometry (½)         | 19. French (2, 3)                   |
| 6. Trigonometry (½)           | 20. German (2, 3, 4)                |
| 7. Physics (1)                | 21. Latin (2, 3, 4)                 |
| 8. Chemistry (1)              | 22. Greek (2, 3)                    |
| 9. Physiology (1)             | 23. Freehand Drawing (1)            |
| 10. Botany (1)                | 24. Mechanical Drawing (½, 1)       |
| 11. Zoology (1)               | 25. Woodworking (½)                 |
| 12. Biology (1)               | 26. Forge Work (½)                  |
| 13. Hygiene (1)               | 27. Foundry Work (½)                |
| 14. Ancient History (1)       | 28. Machine Shop Work (1)           |

[See also supplementary list of entrance subjects, p. 55.]

\* After August, 1906, 1½ units.

Until August, 1907, *twelve* credits will be accepted for admission in partial standing (not applicable to women).

[For special regulations governing the admission of women, see p. 60.]

Entrance credits may be obtained (A) on examination at the University (see pp. 56-57), or (B) wholly or in part without examination (see pp. 57-60).

The following will indicate the preparation necessary in the various subjects:

### 1. English Composition

The work in English Composition should be given at least two recitations a week throughout the entire high school course. The greater part of this time should be devoted to practice in writing, but it is recommended that some attention be also paid to instruction in the fundamental principles of formal rhetoric.

The examination is to test the candidate's ability to write exercises not only free from marked deficiencies in spelling, punctuation, sentence structure, and paragraphing, but also indicative of his ability to think consecutively on a simple subject. The subjects which are set at the time of the examination, will be drawn for the most part from the candidate's own experiences.

(2 units; after August, 1906, 1½ units)

[A candidate admitted to the University in regular standing without fulfilling the requirement in English Composition will be given an opportunity at the end of his first semester to make good his deficiency. Failing to pass this examination, he will be required to enter at once a special class in English Composition and to remain in it until his work is judged to be of passing grade.]

[Concerning time of examinations, see p. 57; substitute for examination, p. 58; exemption from examination, p. 57, B, I.]

### 2. English Literature

The work in English Literature should be given an average of at least three recitations a week throughout the four years of the preparatory course. It should be so conducted as to give the student not only an appreciative understanding of the books selected either for general or for more intensive study, but also a knowledge of their place in the history of English Literature, and especially an ability to read aloud intelligently both prose and verse.

[SPECIAL NOTE.—After January, 1908, the list of books under 2a and 2b will be that recommended by the College Entrance Examination Board, as announced in their Circular No. 25 (for address, see p. 56). Teachers will not find it difficult to make the change from one list to another, the same books, in many cases, occurring in both lists.]



*a. Elementary.*—The teacher may make out the course of reading according to the following groups, choosing two or more books from each group as indicated below. Each book counts as one, unless specially designated as one-half.

[Substantial equivalents for any book in the following list will be accepted; but a book so substituted must be taken from standard English Literature, and must be appropriate to the group in which the change is made.]

Group I (choose two).—Shakspeare's *Merchant of Venice*, *Julius Cæsar*, *Macbeth*; the four Gospels (one book), *or* the equivalent of *Old Testament Stories* (*Modern Readers' Bible Series*).

Group II (choose two).—George Eliot's *Silas Marner* ( $\frac{1}{2}$ ); Goldsmith's *The Vicar of Wakefield* ( $\frac{1}{2}$ ); Thackeray's *The Newcomes*, *or* *Henry Esmond*; Scott's *Ivanhoe*, *or* *Rob Roy*, *or* *Quentin Durward*; Cooper's *The Last of the Mohicans*; Hawthorne's *House of the Seven Gables*.

Group III (choose three).—The *Sir Roger de Coverley Papers*; Irving's *Alhambra*, *or* *Sketch Book*; Hawthorne's *Twice Told Tales*; Webster's *First Bunker Hill Oration*; De Quincey's *Flight of a Tartar Tribe*; Macaulay's *Essay on Clive*, *on Warren Hastings*; Carlyle's *Essay on Burns*.

Group IV (choose four).—Pope's *Rape of the Lock*; a translation of Homer's *Iliad*, I, VI, XXII, XXIV; Goldsmith's *Deserted Village* ( $\frac{1}{2}$ ); Gray's *Elegy in a Country Churchyard* ( $\frac{1}{2}$ ); Burns's *Tam O' Shanter* and *Cotter's Saturday Night* ( $\frac{1}{2}$ ); Byron's *Prisoner of Chillon* ( $\frac{1}{2}$ ); Keats's *Eve of St. Agnes* ( $\frac{1}{2}$ ); Coleridge's *Ancient Mariner*; Scott's *Lay of the Last Minstrel*, *or* *Lady of the Lake*, *or* *Marmion*; Lowell's *Vision of Sir Launfal* ( $\frac{1}{2}$ ); Tennyson's *Geraint and Enid*; Macaulay's *Horatius* ( $\frac{1}{2}$ ). (1 unit)

*b. Advanced.*—Preparation for advanced English Literature should include a brief outline of the progress of English Literature, especially as it is illustrated by the books that have been taken up in class. The books for detailed study should be chosen from the following list. Substitutes cannot, as a rule, be permitted; but if it is desired to omit Group III, one extra book from Group I and two extra books from Group II will be considered an equivalent.

Group I (choose one).—*Macbeth*; *Paradise Lost*, Books I and II; portions of the Bible; Spencer's *Faery Queene*, Book I,

Cantos I, II, and III; Chaucer's Prologue to the Canterbury Tales.

Group II (choose one).—Macaulay's Essay on Clive, *or* on Warren Hastings, *or* on Milton ( $\frac{1}{2}$ ), *or* on Addison ( $\frac{1}{2}$ ), *or* on Johnson ( $\frac{1}{2}$ ); De Quincey's Flight of a Tartar Tribe; Burke's Speech on Conciliation.

Group III.—A series of selected poems by representative English poets, such as is given in any of the following books: Hales's Longer English Poems; Syle's from Milton to Tennyson; Pancoast's Standard English Poems; *or* Gayley and Young's Principles and Progress of English Poetry. (1 unit)

*c. Oral Interpretation.*—Candidates who offer 2*a* and 2*b* may, at their option, offer 2*c* in addition. The examination is oral, at the University, and consists in the reading aloud of passages, both in prose and verse, chosen from the list of books already submitted. Stress will be laid on the candidate's ability to follow and explain intelligently the thought of what is read, and to bring out, to a reasonable degree, the musical quality of verse.

( $\frac{1}{2}$  unit: in effect after August, 1906)

### 3. Algebra

*a. Elementary.*—Algebra through quadratic equations: including the fundamental laws, the laws of exponents for positive and negative integers, formulas of multiplication, the binomial theorem for a positive integral exponent, the transformation of fractions, factoring, common divisors and multiples, radicals, simultaneous equations of the first degree, quadratic equations, the formation of equations with given roots, theory of quadratic equations, and the solution of problems involving the various classes of equations.

Emphasis should be placed upon the methods of factoring, and the solution of equations. Facility and accuracy in the manipulation of algebraic expressions should be attained, as well as an understanding of the meaning of the various operations. The solution of a large number of moderately difficult problems is preferable to the solution of a smaller number of more difficult ones; while the frequent use of problems involving literal expressions serves to impress upon the pupil the generality of algebraic results. (1½ units)

*b. Advanced I.*—Simultaneous quadratic equations and equations solved like quadratics; fractional indices; fractional and

irrational equations; the extraction of roots of polynomials; arithmetic, geometric, and harmonic series; permutations and combinations. ( $\frac{1}{2}$  unit)

*c. Advanced II.*—An additional unit or half unit may be given in Advanced Algebra for a suitable amount of work upon a connected group of the topics usually included under the heading of advanced or higher algebra. ( $\frac{1}{2}$  to 1 unit)

#### 4. Plane Geometry

In the teaching of Geometry stress should be placed upon accuracy of statement as well as upon strict reasoning. This end may be promoted by requiring original propositions to be written out in full in a neat and accurate manner. Emphasis should be placed upon clear thinking rather than upon the acquirement of geometrical knowledge.

The requirement in plane geometry includes problems in mensuration of plane figures and original propositions, as well as the usual demonstrated theorems. The following topics are included: the general properties of plane figures; the circle, and the measure of angles; areas; regular polygons, and the measure of the circle. (1 unit)

#### 5. Solid Geometry

The topics included are: relations of lines and planes to space; the properties of prisms, pyramids, cylinders, and cones; the sphere and spherical triangle; also the mensuration of solids, and original propositions. ( $\frac{1}{2}$  unit)

#### 6. Trigonometry

This subject includes the general formulas of plane trigonometry; the theory of logarithms and the use of logarithmic tables; applications to the numerical solution of triangles and of simple problems in heights and distances. ( $\frac{1}{2}$  unit)

#### 7. Physics

The equivalent of one year's work in the high school, including both laboratory and text-book work. It is preferred that at least one-half the time be given to laboratory work in which the students perform individually such experiments as are described in the better class of laboratory manuals, of which Hall and Bergen's Physics may be named as an example. Accurate notes

of the laboratory work should be kept. The text-book study should cover the ground of some modern text, of which Crew's Physics is a good example.

The desired preparation, both in laboratory and text-book work, is fairly represented by Sanford's Elements of Physics.

(1 unit)

### 8. Chemistry

Besides the usual text-book and recitation work, each student must have a laboratory course in which he performs the experiments for himself. Accurate notes of the laboratory work should be kept. The necessary amount of laboratory work cannot be obtained in less than four hours per week for one school year, in addition to the classroom work. It is preferred that the laboratory work be entirely devoted to illustration of the important facts and principles of general chemistry, rather than partly to analytical chemistry.

(1 unit)

Students who receive entrance credit on recommendation, and who wish to continue the study of chemistry in the University, will be admitted at once to the second half of course *a*, and will be required to begin course 1.

### 9. Physiology

The elements of human physiology and hygiene, the equivalent of Martin's Human Body. The text-book work should be accompanied by experiment, dissection of animals and organs, and a certain amount of study of the tissues with the microscope.

Candidates who have taken only the work in elementary physiology and hygiene done in the grammar or intermediate grades are not prepared to offer the subject for entrance credit. The elementary physiology and hygiene of the grammar grades in this regard, is in the same category as are the other subjects studied in the grammar grades, such as arithmetic and geography, which are assumed as preliminary to the subjects offered for entrance.

(1 unit)

### 10. Botany

The requirements outlined by the College Entrance Examination Board (based on the report of the Committee on Botany of the Science Department of the National Educational Association, modified by a committee of the Society for Plant Morphology and Physiology) may be taken to represent approximately

what is expected of the candidate for entrance credit in Botany. These requirements call for a full year's work, of which it is expected that at least two-thirds shall be genuine laboratory work. One-half of the year is to be devoted to the general principles of morphology, physiology, and ecology. In this work proper account should be taken of the lower plants as well as of the flowering plants. The second half-year is devoted to a study of the natural history of representatives of the larger groups of plants, and the principles of classification. This study is expected to include representatives of the algæ, fungi, mosses, ferns, and the principal types of flowering plants. If it seems desirable, the order of the two half-years' work may be reversed or combined in a different way. (Stevens's Introduction to Botany (Heath & Co., 1902) may be mentioned as indicating the scope of the work.)

In preparing to meet the requirements in Botany, the main thing to bear in mind is that the work shall be of a practical nature; that the study be mainly specimens and not books. Botany is a department of biology, and means something more than the mere collecting and naming of specimens. A study of the growth and development of the forms selected is of the highest importance, and should be made a prominent feature in the work.

If possible, the student should be allowed the use of a compound microscope; but when this is not practicable, microscopic demonstrations by the instructor are indispensable. The laboratory work of the students may be supplemented by such explanatory and text-book work as may be deemed necessary; but this must be understood to supplement and not to replace the laboratory work.

Notes and drawings should be neatly made in blank-books of moderate size. The paper for the drawings should be white, unruled, hard, smooth but not glazed. A hard pencil should be used in drawing, and accuracy and neatness are both to be emphasized. The descriptive notes should not be written upon the same sheets as the drawings, and should be clear and concise, including only what the student has himself seen. Notes taken from lectures or reading should be kept entirely apart from the student's own observations.

No credit will be given for an herbarium. The time necessary to prepare an herbarium may be better devoted to a study of the living plants.

(1 unit)

### 11. Zoology

The candidate should possess a knowledge of the structure and relationships of a series of animals, gained primarily through the study of living forms and the dissection of specimens in the laboratory. At least four hours per week for one school year should be spent in actual laboratory work, which should include a study of the following forms, or their equivalent: amœba, paramœcium, hydra, starfish, sea-urchin, earth-worm, crayfish, grasshopper, clam, slug, squid, dogfish, pigeon, rabbit. Laboratory note-books, certified by the instructor, must be submitted as evidence of the nature of the work, and must contain a full series of drawings and notes based on original dissections made by the student.

The practical work indicated above should be supplemented by such lectures or reading as will furnish a comprehensive knowledge of the groups studied. As a general reference book Parker and Haswell's Text-book of Zoology (Macmillan & Co., 1897) is recommended. (1 unit)

### 12. Biology

A course of study and laboratory work extending through one school year, the time divided equally between Botany and Zoology. The character of the work is indicated under the respective statements of Botany and Zoology (subjects 10 and 11). (1 unit)

### 13. Hygiene

The requirements in Hygiene are based on adequate instruction in personal hygiene, the hygiene of occupation, and the relation of citizen to State in matters of sanitation and public health. Only those candidates will be admitted to examination who have graduated from High Schools possessing satisfactory facilities for instruction. The work in Elementary Hygiene and "Calesthenics" in the Grammar Schools is not an equivalent. Athletics cannot be substituted for any part of the requirements outlined.

The course should give the student a basis for intelligently meeting his individual problems of health in any environment, rational habits of regular exercise, practical knowledge of general hygiene and sanitation, and familiarity with the real dangers of transmissible diseases, and the methods of controlling them.

Three periods per week of gymnasium instruction and recita-

tion work on Hygiene of the school and the home during the first two years, followed by two recitation periods per week for the third year on Public Health, constitute the minimum requirements in this subject.

The physical training instruction should, when practicable, be continued over the whole period of the High School instruction. No single text-book can be suggested, but the Department of Hygiene will furnish a list of approved reference books.

A typical course for the High School may be outlined as follows:

**FIRST YEAR:—**(a) One recitation per week through the year on the physiology of exercise, and the general conditions conducive to rational results from physical training.

(b) Two periods per week elementary gymnasium work planned for the development of general physique and endurance. At least one period per month should be devoted to regular drills in the preliminary treatment of accidents and emergencies.

**SECOND YEAR:—**(a) One recitation per week on demonstration and prescribed study of personal hygiene and the hygiene of occupation.

(b) Two periods per week of gymnasium instruction consisting of corrective drills and apparatus work so planned as to develop coördination and prompt adaptation of the body to the demands of unusual positions or situations of danger. One period per month should be given to military marching and drills in "Camp Hygiene."

**THIRD YEAR:—**(a) Two recitations per week on the principles of public health and the hygiene of transmissible diseases. This should consist of text-book work and carefully planned demonstrations and field work. The class as a whole should construct a sanitary map of the community.

(b) Gymnasium instruction should be elective, but where possible special coördination work, as in fencing, wrestling, swimming, should be given by the instructor to those electing the work. Regular exercise in some form throughout the third and fourth years should be encouraged as a factor in the evidence for recommendation.

(1 unit)

#### 14-17. History

All candidates for credit in entrance History must submit evidence of considerable work done in addition to the text-

book preparation. For the sake of the training involved, as well as for the information acquired and the stimulating of interest, the following exercises are recommended: Supplementary reading, including the use of original material where possible; notes and digests of reading; abstracts or analyses of specified chapters, both of the text-book and supplementary reading; outlines of subjects, gathering material from all available sources; map drawing from printed data or comparison of existing maps, showing movements of exploration, migration or conquest, territorial changes, or social phenomena.

Such work should be regarded as a means rather than the end of historical study, and in every instance should be adapted in character and amount to the stage of advancement of the class and of the individual pupil. As the pupil progresses in his study, more advanced work may well be required in the form of historical composition, and of note-taking in the class from talks by the teacher or reports of fellow pupils.

The evidence of such work may be presented in the form of a note-book or bound collection of notes, containing all exercises prepared upon any of the four history subjects arranged in order of their assignment and certified and approved by the teacher. In the case of schools whose recommendations are accepted in place of the examinations, a detailed statement by the teacher as to the character, amount, and quality of the work of each candidate may be submitted in place of the note-book itself.

#### 14. Ancient History

Text-books: *The Oriental Nations*—Myers, General History, pp. 1-86; or West, Ancient History, pp. 1-75; or an equivalent. *Greece*—Botsford, History of Greece; or Myers, History of Greece; or Morey, Outlines of Greek History; or Oman, History of Greece; or West, Ancient History; or the equivalent. *Rome*—Botsford, History of Rome; or Myers, Rome; or West, Ancient History; or Morey, Outlines of Roman History; or an equivalent.

For supplementary reading and reference: Botsford, Story of Rome; Munro, Source Book of Roman History, "Epochs of Ancient History" Series; Wolfson, Essentials in Ancient History; Cox, General History of Greece (Student Series); Pelham, Outlines of Roman History; Abbott, Roman Political Institutions; Shuckburgh, History of Rome; Ginn & Co.'s Classical



Atlas, or Kiepert, Classical Atlas; Tozer's Primer of Classical Geography. See, also, Historical Sources in Schools, and A History Syllabus for Secondary Schools. (1 unit)

#### 15. Mediæval and Modern History

Text-books: Myers, Mediæval and Modern History; or Robinson, History of Western Europe; or the equivalent.

For supplementary reading and reference: Robinson, Readings in European History; West, Modern History; Duruy, History of the Middle Ages; Adams, Civilization During the Middle Ages; Bemont and Monod, Mediæval Europe; Fyffe, History of Modern Europe (Popular Edition); Seignobos, Political History of Europe since 1814; the "Epochs" Series; University of Pennsylvania, Translations and Reprints; Fling, Studies in European History; Putzger, Historischer-Schul-Atlas. See, also, Historical Sources in Schools. (1 unit)

#### 16. History of England

Text-books: Andrews, History of England; or Coman and Kendall, History of England; or Cheyney, A Short History of England; or Gardiner, Student's History of England; or Ransome, Advanced History of England; or Larned, History of England; or Oman, History of England; or Wrong, History of the British Nation; or Terry, History of England; or an equivalent.

For supplementary reading and reference: Bright, History of England; "Epochs" Series; Green, Short History of the English People; Traill, Social England; Larned, History for Ready Reference; Porritt, The Englishman at Home; Adams and Stephens, Select Documents of English Constitutional History; Colby, Sources of English History; English History Illustrated from Original Sources; Kendall, Source Book of English History; Translations and Reprints; and Gardiner, School Atlas of English History. Desirable references are to be found in Andrews, Cheyney, Coman and Kendall, Larned, and Wrong. See, also, Historical Sources in Schools, and A History Syllabus for Secondary Schools. (1 unit)

#### 17. American History

Text-books: McLaughlin, History of the American Nation; or Channing, Students' History of the United States; and Ashley,

American Government; or Hinsdale, American Government; or Clark, Outlines of Civics, and Bryce, American Commonwealth (abridged edition); or equivalents.

For supplementary reading and reference: "Epochs of American History" Series; the "American History" Series; Hart, American History Told by Contemporaries; MacDonald, Select Charters, Select Documents, and Select Statutes; and McCoun, Historical Geography of the United States. See, also, Historical Sources in Schools. (1 unit)

### 18-19. Spanish and French

The requirements in Spanish and French are the equivalent of those recommended by the Committee on College Entrance Requirements of the National Educational Association.

The Elementary study of the languages, covering two years of daily recitations, should lay stress on the following points:

1. An accurate knowledge of the forms of the languages, including the inflections, conjugations, and principal parts of verbs. Particular attention should be devoted to this part of the subject; constant drill in the verbal inflections, both written and oral, and dictation exercises of various kinds, are recommended.
2. The elements of syntax, such as the uses of the article, the personal pronouns, the subjunctive, the partitive constructions, and the agreement of the participles.
3. The ability to turn easy English prose into French or Spanish.
4. The ability to translate ordinary French or Spanish into idiomatic English.
5. The ability to pronounce French and Spanish correctly. It is believed that a fairly good pronunciation can be obtained in the fitting schools, if the necessary time is devoted to the subject. Pronunciation should be studied both theoretically and practically, and the characteristics of vowel qualities, of stress, pitch, and intonation should be pointed out.

The Intermediate requirements are intended to represent a third year of daily recitations. The specific demands are:

1. A thorough knowledge of modern French and Spanish syntax.
2. The ability to turn modern French and Spanish at sight into idiomatic English.
3. The ability to translate connected English prose into French or Spanish.
4. The ability to write French or Spanish from dictation.

For all grades the examination will include a test of pronunciation and the writing of French or Spanish from dictation.

The reading in the Elementary course should cover from four hundred to six hundred duodecimo pages; in the Intermediate requirements a similar amount should be read of prose and verse, a portion to be in the dramatic form. No definite text-books are prescribed, but the books named below will be found adequate for the mastery of these requirements.

### 18. Spanish

*a. Elementary.*—Hills and Ford's Spanish Grammar (Heath & Co.), or Garner's Spanish Grammar (American Book Co.); Ramsey's Elementary Spanish Reader (Holt & Co.); Matzke's First Spanish Readings (Heath & Co.); Tamayo y Baus, Un Drama Nuevo (Jenkins, New York); Valdés, José (Heath & Co.); Alarcón, El Capitán Veneno (Heath & Co.). (2 units)

*b. Intermediate.*—Ramsey's Elementary Spanish Text-book (Holt & Co.); Ramos y Vital, Zaragueta (Silver, Burdett & Co.); Caballero, La Familia de Alvareda (Holt & Co.); Alarcón, El Niño de la Bola (American Book Co.); Moratín, El Sí de las Niñas (Ginn & Co.); Echegaray, El Gran Gareoto (Koehler, Boston). (1 unit)

### 19. French

*a. Elementary.*—Fraser and Squair's French Grammar and Reader, Part I (Heath & Co.), or Whitney's Practical French Grammar, Part I (Holt & Co.), or Grandgent's Essentials of French Grammar (Heath & Co.), or Chardenal's Complete French Course (Allyn & Bacon), or François' Beginners' French (American Book Co.); Super's French Reader (Heath & Co.), or Aldrich and Foster's French Reader (Ginn & Co.), or François and Giroud's Simple French (Holt & Co.); Dumas, La Tulipe Noire; Halévy, L'Abbé Constantin; Labiche, Le Voyage de Monsieur Perrichon; Mérimée, Colomba. For the study of pronunciation, Matzke's Primer of French Pronunciation (Holt & Co.) is recommended. (2 units)

*b. Intermediate.*—Fraser and Squair's French Grammar and Reader, Part II (Heath & Co.), or Whitney's Practical French Grammar, Part II (Holt & Co.), or Edgren's Compendious French Grammar (Heath & Co.); George Sand, La Petite Fardette; Balzac, Eugénie Grandet; Victor Hugo, Hernani (Heath & Co.); Fontaines, Historiettes Modernes (Heath & Co.).

(1 unit)

**20. German**

The requirements in German are essentially those recommended by the Committee on College Entrance Requirements of the National Educational Association.

All candidates should present a statement from their former teacher of the amount of German read and the text-books used.

*a. Elementary.*—The ability to translate easy German prose and verse at sight; an accurate knowledge of the principles of grammar, embracing especially inflections, word-order, syntax, the composition of words, and the force of prefixes and suffixes; the ability to translate easy prose from English into German; the ability to pronounce German and to recognize German words and simple sentences when spoken. Careful attention should be given to the rules for pronunciation and accentuation, to insure the fluent and intelligent reading of the German texts used in the class-room. This preparation would be represented, approximately, *in reading*, by material of the character of Thomas and Hervey's Reader, and the careful study of one or more modern dramas (about two hundred duodecimo pages of easy German), supplemented by the reading of German poems, lyrics as well as ballads, a number of which should be memorized; *in Composition*, by the first twenty-six exercises in Harris's German Prose Composition, or an equal amount of work based on texts read in class. These exercises, the original work done by the student, followed by the corrected work approved by the teacher, should be written in ink and preserved for inspection by the Department. (2 units)

*b. Intermediate.*—The ability to translate ordinary German prose and verse at sight; a thorough knowledge of word-formation, derivatives, and the relation of the English and German consonantal changes; advanced German syntax, with especial reference to the uses of the tenses and cases, the modal auxiliaries, and the moods; the ability to translate into German easy connected English prose.

It is believed that this preparation can be acquired by the careful reading of five hundred duodecimo pages of classical and contemporary prose and verse, in addition to the reading required for Elementary German. It is recommended that one-half of this reading be selected from the following classics: Lessing's *Minna von Barnhelm*, Goethe's *Egmont*, or *Götz von*

Berlichingen, Schiller's Wilhelm Tell, or Maria Stuart; the other half from more recent writers such as Grillparzer, Freytag, Keller, Storm, etc. It is further recommended that particular attention be paid to the literary value of the works read. For the preparation in translation from English into German the first fifty pages of von Jagemann's, or Poll's German Prose Composition, or its equivalent, is recommended. This work should be preserved in the manner suggested under Elementary German. It is desirable that candidates should acquire the ability to follow a recitation conducted in German, and to answer in simple German sentences. (1 unit)

*c. Advanced.*—A fourth unit in German may be given to candidates who fulfill, in addition to the preparation required in Elementary and Intermediate German, the following requirements: Advanced German grammar and syntax; elements of the comparative grammar of English and German; a thorough knowledge of at least two of the following classical writings: Goethe's Hermann and Dorothea, or Iphigenia, Lessing's Nathan der Weise, and Schiller's Wallenstein, as well as of two or more recent dramas, which should be read as much as possible with an appreciation of their literary value; the reading of advanced literary and scientific German prose; advanced German prose composition, and the ability to follow lectures given in German. (1 unit)

## 21. Latin

All candidates should present a statement from their former teacher of the amount of Latin read and the text-books used.

*a. Elementary.*—The requirements for Elementary Latin are as follows: 1. An accurate knowledge of the ordinary forms of the language. 2. The ability to pronounce Latin so as to observe the proper quantity of vowels. 3. A familiarity with the ordinary rules of syntax. Particular attention should be devoted to these three points. 4. The ability to translate easy Latin prose into English. 5. The ability to turn simple English sentences into Latin.

For 1906-07 the examinations in translation will be based on the first four books of Cæsar's Gallic War, but approved schools may use an equivalent Latin text, and are recommended to increase the amount of reading indicated. Some attention should also be paid to translation at sight from easy prose. (2 units)

*b. Advanced.*—The requirements for Advanced Latin include those for Elementary Latin, together with the following: 1. Continued training in Latin forms and syntax. 2. Knowledge of the rules of prosody, and ability to scan Vergil's hexameters. 3. The ability to translate from Cicero's Orations. 4. Careful preparation of the first, second, fourth, and sixth books of Vergil's *Æneid*, with less detailed knowledge of the third and fifth books. 5. The ability to turn into Latin connected English of simple style.

For 1906-07 the examinations in translations will be based on the Vergil assigned and on Cicero's Orations against Catiline, for Archias, and for the Manilian Law; but approved schools may use any equivalent Latin prose text, and are recommended to add Sallust's Catiline and other speeches of Cicero to the minimum given above. All schools should pay some attention to translation of prose at sight, and the examination will include a passage from Cicero to test the ability of candidates in this respect. Credit in Advanced Latin is distributed as follows: Cicero,  $\frac{1}{2}$  unit; Vergil,  $\frac{1}{2}$  unit; Third-year Composition,  $\frac{1}{2}$  unit; Fourth-year Composition,  $\frac{1}{2}$  unit. (2 units)

## 22. Greek

*a. Elementary.*—Grammar, the inflections, the formation of words, and the essential points of syntax; Xenophon's *Anabasis*, Books I-IV, or an equivalent; prose composition (Collar and Daniell's text-book is recommended); translation at sight of easy prose. It is expected of every student that he be able to read Greek aloud without stumbling. (2 units)

*b. Advanced.*—Homer, *Iliad*, Books I-III, or an equivalent; advanced prose composition. The candidate must show a thorough acquaintance with the forms and syntax of Homer, and must be able to scan any given passage exactly and to read it rhythmically. In the writing of Greek the candidate should have a year's training beyond that required in Elementary Greek. (1 unit)

## 23. Freehand Drawing

Preparatory drawing should stimulate in the student appreciation for the best pictorial and applied art as well as give training in the technique of representation.

Instruction in applied art should include exercises in harmony of color as applied to room and furniture decoration and to dress; and the study of plant forms as adapted to decoration

in some of the multiple every-day uses, as in calendars, announcement cards, programmes, advertisements, magazines and the printing art, etc.

Representation should include the ability to represent groups of two or three colored objects, such as dishes, books, vegetables, machine parts, shells, leaf sprays and other organic forms. Representation of these should include knowledge of the appearance in both *shapes of contours* and in *light and shade*.

The style of drawing should be direct, facile and effective, adapted to the thing drawn, with refinement in its proper place and vigor in its proper place. The candidate should be equally familiar with the use of pencil and charcoal or brush.

As many schools are not giving instruction in the applied art side of drawing, entrance credit will be given, for the present, for a sufficient attainment in representative ability; but when this alone is offered a higher standard of skill must be attained, than when the instruction covers a broader field.

The candidate for examination should provide the kind of paper and materials which he is accustomed to use.

Candidates wishing credit without examination, must present a large number of drawings, duly certified, and accompanied by a statement from the teacher or school officials to the effect that the pupil has satisfactorily completed a course of instruction in freehand drawing which represents two hundred and forty hours of work. (1 unit)

#### 24. Mechanical Drawing

The candidate is expected to have acquired neatness and accuracy in the use of drawing instruments. His course should have included practice in line work, lettering, machine or architectural working drawings, and tracing; recognition, commensurate with the length of course and the degree of proficiency attained in the use of instruments, will be given, however, to those courses consisting of line work, lettering, and the construction of geometric figures. He should present for inspection as much of his work as possible, duly certified by his teachers. As an examination the candidate may be called upon to make a simple working drawing of some specified object; he should provide his own materials for the examination, as follows: T square, triangle, instruments, pencils, eraser, scale, thumbtacks, and sheet of drawing paper not smaller than 12x18 inches.

Full unit credit equivalent to about two hundred and fifty hours of work under instruction. ( $\frac{1}{2}$  or 1 unit)

### **25-28. Shopwork**

Two things will be expected of candidates for entrance credit in these subjects: first, manual dexterity, as evidenced by neatness, accuracy, and dispatch in the execution of a given piece of work; second, a knowledge of the materials and tools used, and a thorough understanding of the principles involved in the operations.

Candidates who have been trained in manual training schools or in commercial shops should present letters from their teachers or employers stating clearly and in some detail the time they have been employed, the kind of work they have done, and its quality. The examination may be oral, written, the actual execution of a set piece of work, or all combined. In each subject the ability to read and follow a working drawing is expected.

Below are given the more specific requirements for the particular subjects, with the understanding that the foregoing general requirements apply to them all.

### **25. Woodworking**

The ability to recognize the common varieties of wood and some knowledge of their physical properties, such as ease of working, strength, toughness, hardness, etc., is expected. Candidates must be familiar with the uses of the principal hand tools of carpentry and with their care. They should be able to make the ordinary kinds of joints and splices. They should be familiar with the operation of the lathe, jig-, band-, and circular-saws, and planing machines.

Equivalent to about two hundred hours of work under instruction in a manual training school, or a year in a commercial shop. ( $\frac{1}{2}$  unit)

### **26. Forge Work**

This demands an elementary knowledge of the properties of wrought iron and steel, and of the proper heats at which to work them. The management of forge and fire and the nature and uses of all the ordinary blacksmithing tools should be known. The candidate must be able to execute all of the common forging processes, including the various forms of welds



in iron and steel; he is also expected to understand hardening, tempering, and annealing.

Equivalent to about two hundred hours of work under instruction in a manual training school, or a year in a commercial shop. (½ unit)

#### 27. Foundry Work

The candidate should have a knowledge of the tools and processes used in the ordinary forms of green sand moulding and core work. He should be familiar with the cupola and know how to charge and operate it. He must have a knowledge of the properties of cast iron, and should have had experience in pouring cast iron as well as in moulding.

Equivalent to about two hundred hours under instruction in a manual training school, or a year in a commercial foundry. (½ unit)

#### 28. Machine Shop

A knowledge of the tools and processes used in the working of iron, steel, and brass is demanded of the candidate. He should be able to execute all forms of vise-work, such as chipping, filing, scraping, fitting, and finishing. He must be familiar, through experience in operation, with the simpler forms of machine tools, such as the lathe, drilling machine, planer, shaper, and milling machine.

Equivalent to about four hundred hours under instruction in a manual training school, or two years in a commercial shop. (1 unit)

#### SUPPLEMENTARY ENTRANCE SUBJECTS

The following entrance subjects will also be recognized when accredited (on examination or recommendation) by the universities named:

Astronomy (½ unit): Chicago, Harvard, Minnesota.

Biblical History and Literature (1 unit): Chicago.

Economics (½ unit): Harvard, Kansas, Wisconsin.

Advanced French (1 unit): California, College Entrance Examination Board, Michigan, Wisconsin.

Geometrical Drawing (1 unit): California.

Physical Geography (1 unit): California, Chicago, Kansas, Michigan.

Advanced Physics (1 unit): Columbia, Harvard.

## A. ENTRANCE CREDITS ON EXAMINATION

Examinations in all entrance subjects are held at the University in January and in August. In May examinations are held in English Composition and English Literature only (after May, 1906, in English Composition only). Special examinations outside of the regular examination days will not ordinarily be granted. In exceptional cases such examinations may be arranged by the Committee on Admission; but a special fee of two dollars will be charged the candidate for each subject in which examination is taken.\*

Specimen examination questions may be obtained on application to the Registrar.

Entrance examinations are held in the following order (for dates, see p. 5) :

First Day:—Elementary Algebra, 8:15; Advanced Algebra, American History, 10:15; Plane Geometry, Botany, 1:30; Solid

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\* Candidates desiring examinations at the close of the school year are advised to take the June examinations of the College Entrance Examination Board. In 1906 these examinations will be held June 18-23.

All applications for examination must be addressed to the Secretary of the College Entrance Examination Board, Post Office Sub-Station 84, New York, N. Y., and must be made upon a blank form, to be obtained from the Secretary of the Board upon application. Applications for examination at points in the United States east of the Mississippi River, also at Minneapolis, St. Louis, and other points on the Mississippi River, must be received by the Secretary of the Board on or before Monday, June 4, 1906; applications for examination elsewhere in the United States or in Canada must be received on or before Monday, May 28, 1906; and applications for examination outside the United States and Canada must be received on or before Monday, May 14, 1906. Applications received later than the dates named will be accepted when it is possible to arrange for the examinations of the candidates concerned, but only upon the payment of \$5 in addition to the usual examination fee.

The examination fee is \$5 for all candidates examined at points in the United States and Canada and \$15 for all candidates examined outside of the United States and Canada. The fee (which cannot be accepted in advance of the application) should be remitted by postal order, express order, or draft on New York to the order of the College Entrance Examination Board.

A list of the places at which examinations are to be held by the Board in June, 1906, will be published about March 1. Requests that the examinations be held at particular points, to receive proper consideration, should be transmitted to the Secretary of the Board not later than February 1.

The examination questions set by the College Entrance Examination Board in 1901, 1902, 1903, 1904, and 1905 are published in separate volumes by Ginn & Co., Boston.

Geometry, Mediæval and Modern History, 3:30; Trigonometry, 4:45.

Second Day:—Physiology, Elementary French, 8:15; English Composition, 10:15; Chemistry, Intermediate French, 1:30; Hygiene, English History, 3:30.

Third Day:—Physics, Elementary Spanish, 8:15; Intermediate Spanish, Elementary German, 10:15; Elementary English Literature, Zoology, Intermediate German, 1:30; Advanced English Literature, Advanced German, 3:30.

Fourth Day:—Elementary Latin, Mechanical Drawing, 8:15; Biology, Advanced Latin, 10:15; Freehand Drawing, Elementary Greek, 1:30; Ancient History, Advanced Greek, 3:30; Woodworking, Forge, Foundry, Machine Shop, 8:15 and, by appointment, throughout the day.

The examinations in entrance subject 2c (Oral Interpretation of English Literature) are held during the first two days of the examination period; but appointments must be made during the forenoon of the first examination day, unless arranged in advance by letter or otherwise. [Correspondence regarding appointments should be addressed to Prof. L. E. Bassett, Stanford University, Cal.]

Candidates for admission may, if they prefer, take a part of their examinations a semester or a year before they propose to enter; but (unless following graduation from an approved school) account will not be taken of an examination passed more than sixteen months before the proposed time of entering.

## B. ENTRANCE CREDITS WITHOUT EXAMINATION

### I. On Fulfilling Particular Requirements

1. Full undergraduate standing, without further tests, will be granted as follows:

(a) To holders of sixty-count Diplomas issued by the Regents of the University of the State of New York. [Diplomas of a less number of counts and sixty-count Academic Certificates (and subsequent pass cards) will be adjusted on the same basis as recommendations from approved schools (see below).]

(b) To recommended graduates of the California State Normal schools, and to graduates of other Normal Schools approved by the California State Board of Education as of equal rank with the State Normal Schools of California, who are holders of the

highest grade diploma issued by these Normal Schools. (For conditions on which advanced standing may be granted Normal School graduates, see p. 62.)

(c) To candidates from Japan as follows: (1) to matriculates of the Imperial Universities of Tokyo and Kyoto; (2) to graduates of the Sapporo Agricultural College, the Higher Commercial School, Doshisha College, and Keiogijiku College; (3) to graduates of the eight Higher Schools (Kotogakko), the two Higher Normal Schools, the Girls' College, and the Girls' Higher Normal School. But before admission to the University such candidates must show ability to use and to understand readily both written and spoken English; if coming directly from Japan they must ordinarily expect to spend at least one year in an American preparatory school, or under special instruction in English, before being able to meet this test.

(d) To candidates from Mexico, as follows: (1) to graduates of the Military School, the Normal School, and the National Preparatory School of Mexico, whose credentials show satisfactory passing grades (7 or above on a scale of 12); (2) to graduates of other preparatory schools (maintaining six year courses) whose credentials show passing grades of 9 or above on a scale of 12. But before admission to the University such candidates must show ability to use and to understand readily both written and spoken English; if coming directly from Mexico they must ordinarily expect to spend at least one year in an American preparatory school, or under special instruction in English, before being able to meet this test.

2. Preliminary credits secured by passing the regular entrance examinations of institutions of equivalent rank, or of the College Entrance Examination Board, will be accepted in subjects corresponding to those outlined in the entrance list (pp. 37-55).

3. As a substitute for the examination in English Composition, an exercise book may be submitted according to the following regulations: The book must contain at least six compositions of about 250 words each, written in class and not corrected by the teacher, two of the compositions expository in nature, and not more than two of them to be on subjects drawn from the pupil's reading. These compositions must be written without any aid whatever, and upon topics assigned by the teacher; they must remain in the custody of the teacher until submitted

to the University, and must be submitted exactly as written. They must be accompanied by blanks, to be obtained from the Registrar, properly filled out and signed by the teacher. To be acted on in August, the books must be in the hands of the Registrar by August 20th; to be acted on in January, by December 30th; to be acted on in May, by May 1st.

## II. On Recommendation from Approved Schools

The University will receive recommendations from approved preparatory schools in accordance with the following classification and conditions:

(A) Preparatory schools accredited by (a) the New England College Entrance Certificate Board, (b) the North Central Association of Colleges and Secondary Schools, (c) colleges and universities of high rank.

1. Accredited subjects will be accepted on recommendation of the principal (except in English Composition and in Oral Interpretation of Literature), provided: (a) the school maintains a full four-years' course of high school work; (b) the candidate has completed the full course and has been duly graduated after at least one year's attendance; (c) the time given to the subject and the amount of work covered is not less than that indicated in the outline of entrance subjects (pp. 37-55); (d) the grade of work is satisfactory.

2. Recommended subjects, not accredited, may be accepted provided: (a) the subject matter has been duly covered and the full amount of time given; (b) the work is recommended as thoroughly well done (the grade of work being ordinarily not less than ten per cent above the lowest passing grade); (c) it is apparent that accrediting has not been refused because of inadequate equipment or poor quality of work.

(B) Preparatory schools of established reputation, with adequate equipment and teaching facilities, and maintaining a full four-years' high school course, but not accredited as in (A) above.

1. Schools accredited by a university of recognized standing in their own State may be granted accrediting privileges (a) upon inspection undertaken or authorized by the University, or (b) without such inspection, provided the report of the accrediting university is thoroughly favorable. Such accrediting will be in accordance with the provisions named in (A), 2, a and b above.

2. Schools not accredited by a university of recognized standing in their own State will be granted accrediting privileges only upon inspection undertaken or authorized by the University. But this requirement may be temporarily waived, by vote of the Committee, in the case of schools which have already sent five or more pupils to the University, and whose graduates have made satisfactory records in the University. Such accrediting will be in accordance with the provisions named in (A) 2, *a* and *b* above.

English Composition must be passed on examination, or by the presentation of an acceptable exercise-book as provided above (p. 58). But recommendations from accredited schools may be temporarily accepted in making up the required fifteen entrance units. (The conditions on which the requirement in English Composition may be met after matriculation, are stated on p. 38.)

Oral Interpretation of Literature (subject 2*c*) is credited on examination only; but recommendations from accredited schools may be temporarily accepted in making up the required fifteen entrance units.

Recommendations will be considered at any time of the year, but, since, in general, candidates cannot be assured of admission to the University without examination in one or more subjects, it is important that recommendations be forwarded as early as possible.

Blanks for admission on recommendation may be obtained from the Registrar.

#### Special Regulations Governing Admission of Women

The Founding Grant of the University, as amended May 31, 1899, directs "that the number of women attending the University as students shall at no time ever exceed five hundred." In conforming to this provision the following plan of admission has been adopted:

Graduates of this University and of universities of equivalent standing will be admitted without previous application. Women once admitted to the University will be allowed without further application to continue until graduation, or so long as scholarship and conduct are satisfactory. But places will not be held for women students after the regular registration days, except by permission of the Committee on Registration granted in advance.

For the remaining number of women students permitted by

the Founding Grant (for August, 1906, approximately 150) the plan of admission is as follows:

Applications may be made at any time. They must state the proposed time of entrance and the credentials which the candidate expects to offer. To insure consideration, applications must be formally renewed within ten months of the proposed date of entrance. Blanks for application may be obtained of the Registrar.

A numbered list will be begun on the first day of July. Only those candidates will be listed whose credentials are complete (that is, who on examination, or recommendation, or both, have been granted fifteen entrance units). If more than the designated number present complete credentials on this date the order will be determined by following, as far as practicable, the original order of application. After July 1st candidates will be listed in the order of application (accompanied by complete credentials). When two or more are received at the same time, the serial order will be determined in the same manner as before.

On registration day candidates will be preferred in their serial order. After registration day the serial order of candidates actually present will be observed.

Vacancies in January may be filled from a numbered list to be begun on the first day of October preceding. Candidates on the August list, not matriculating at that time, may be entered on the January list in their serial order, provided written request to that effect shall be made to the Registrar on or before October 1st. Additional applications will be considered in the manner used in making up the August list.

## II. AS SPECIAL STUDENTS

Persons under twenty-one years of age will not be received as special students.

Persons under twenty-five years of age, not graduates of some approved high school or equivalent preparatory school, will be admitted only upon passing entrance examinations in subjects aggregating at least five units. The candidate may usually select the subjects in which examinations shall be taken, but engineering students must include elementary algebra and plane geometry.

The privileges extended to special students are not intended for those who come directly from the schools, with insufficient preparation for regular standing, but for those who are qualified by age, character, practical experience, and habits of study to

profit by university courses. (On account of the limitation upon the number of women students, women are not admitted as special students.)

Special students are subject to the same University regulations as regular undergraduates, and they may become candidates for graduation upon fulfilling all University requirements (see p. 67).

A failure on the part of any special student to maintain a good standing in the studies to which he is admitted will at once sever his connection with the University; and a special student suspended for failure in University work may be re-admitted only upon attaining regular undergraduate standing.

Blank applications for admission as special students may be obtained from the Registrar.

### III. TO ADVANCED STANDING

Students from other institutions of recognized collegiate rank, who present letters of honorable dismissal, may be admitted to such standing and upon such terms as the Faculty may deem equitable. Students from institutions of equivalent rank, who maintain a satisfactory record after admission, may expect to receive the same standing as at the former institution, except that no such student can be given more than three years' advanced credit (ninety unit-hours toward graduation), and that differences in standard of entrance preparation will be taken account of. Every candidate is required to present, along with a catalogue of the institution in which he has studied, a full statement, duly certified, of the studies he has completed, including studies passed or credited at entrance.

Recommended graduates of approved State Normal Schools where the normal training has been preceded by a full four years' high school course, may be granted an advanced credit of not more than thirty units.

Blank applications for admission to advanced standing may be obtained from the Registrar.

All applications for advanced standing on the basis of work done before entering the University must be filed within two years after matriculation; and such applications will not be received at a later date.



## IV. TO GRADUATE STANDING

Graduates of this University, and of other institutions of recognized collegiate rank, may be admitted to graduate standing in the University upon presentation of diplomas or equivalent credentials. Admission to technical graduate standing does not imply admission to candidacy for an advanced degree (for the conditions of such candidacy, see p. 76). If graduates of other universities desire to become candidates for the baccalaureate degree, the question of units required for graduation may be waived, upon approval of the Committee on Admission and Advanced Standing, and the degree conferred on the satisfactory completion of not less than thirty units of University work and the fulfillment of all major and minor requirements. Graduate students not candidates for any degree, may be permitted, upon the approval of the major department, to undertake such work as their previous training seems to warrant.

## UNIVERSITY RESIDENCE

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The following regulations regarding registration and University credit represent the fixed policy of the University in the matters concerned. Only in exceptional cases will the enforcement of the rules be relaxed.

### Registration

On the appointed Registration Days, in August and January, each student must obtain a certificate of registration *in person*, at the Registrar's office.

Matriculated Students may register after the appointed Registration Days and during registration week, upon payment of a special fee of two dollars; during the week following the fee for late registration will be four dollars; after that the fee will be increased one dollar for each week's delay. Registration of undergraduates and specials will not be permitted later than one month after the beginning of instruction.

### Study Card

At the Registrar's office the student receives a card for selection of studies for the semester. This card, properly filled out, and approved by the major department, must be filed with the Registrar not later than the Friday following Registration Day; but late study cards will be accepted upon payment of a special fee of two dollars. Students registering after the Friday of registration week, must have their study cards indorsed by all the instructors under whom work is taken. All work for which University credit is desired must be duly registered.

### Enrollment in Classes

A student desiring to enter any class must present his certificate of registration to the instructor for enrollment at the beginning of each semester. Whether the student is qualified for enrollment in any particular class is a question to be decided by the instructor in charge. In general, the prerequisites for taking any given course are noted under "Courses of Instruction."

## Change of Studies

A student desiring to drop a subject once taken up, or to take up a new subject after the study card has been filed, must present to the Committee of Registration a petition for such change, approved by the major department and by the instructors whose subjects are to be taken or dropped. In general, petitions so approved if they do not give the student too many unit-hours, or too few unit-hours, and if presented within one month after the beginning of the semester, are granted without question. If presented at a later time in the semester they will be granted only for extraordinary reasons, and, where the taking up of new subjects is involved, only on payment of a special fee of two dollars for each course; if otherwise acceptable but presented after the close of the semester, they will be granted only on payment of a special fee of four dollars for each course. In the case of petitions to drop subjects during the last six weeks of the semester, action will be deferred until the close of the semester.

## Change of Major Subject

Petitions to change the major subject will be granted when approved by the departments in charge of both the old and the new subjects, the student being held to all the requirements of the new major subject. In general, the major subject may be changed at the end of the first year, and in some cases later, without appreciable loss of time to the student.

## Amount of Work

Fifteen hours per week of recitations or lectures or an equivalent in laboratory work, constitutes an average semester's work. In general, students may register for as few as *thirteen* or as many as *eighteen* unit-hours; but in the case of students doing outside work for self-support or otherwise, and where considerations of health are involved, special restrictions will be made upon recommendation of the professor of hygiene; and where conditions or failures have been incurred in the preceding semester, not more than *fifteen* units may be registered unless by special permission of the Committee on Registration granted in advance. Permission to register for less than *thirteen* units may also be granted for special reasons; but registration for less than *ten* units will not ordinarily be accepted. Not more than eighteen units may be credited toward graduation for any

semester's work. Graduate students are not held to any special number of hours, but registration will not ordinarily be permitted unless such students are prepared to devote at least half of their working time to University study. Petitions for irregular hours should be presented at the beginning of the semester.

Every unit for which credit is given is understood to represent approximately, for the average student, three hours of actual work per week, through one semester. Thus, in lecture or recitation work for one unit of credit one hour per week may be allotted to the lecture or recitation and two hours for preparation or subsequent reading and study on the part of the student; but if a less amount of time is allotted for preparation or subsequent reading or study, there shall be a proportionate decrease in the amount of credit. Where the time is wholly occupied with drawing, field, or laboratory work, or in the class-room work of conversation classes, three full hours per week through one semester are expected of the student for each unit of credit; but where such work is supplemented by systematic outside reading or experiment under the direction of the instructor, such a reduction may be made in the actual drawing, field, laboratory, or class-room time as seems just to the department concerned.

### Conditions and Failures

A student conditioned in any subject may arrange with the instructor concerned for such supplementary examinations or study as will make good the deficiency; but such deficiency must be removed within one year after the condition is incurred, otherwise the condition will be considered a failure. Work reported as incomplete may be made up during the first or second semester's registration after the incomplete is incurred; but if not made up until the second semester, the incomplete work shall be duly entered on the student's study card and shall count as part of the permitted registration for that semester to the extent of the actual unit-hours required for making up such incomplete work as estimated by the instructors concerned. A student failing in any subject cannot receive credit for the portion in which the failure is incurred until the subject has been re-registered and taken over again in class. A condition or failure or withdrawal from class without permission of the Committee on Registration, limits the student to *fifteen* units the semester following.

### Entrance Conditions

Students admitted to partial undergraduate standing may make up entrance deficiencies (1) by completing before graduation, in addition to the one hundred and twenty units required for graduation, five units of university work for each entrance unit lacking (except in the case of English Composition, which must be passed on examination, or completed in a special class as provided on page 38); or (2) by passing entrance examinations in the additional subjects necessary, provided such examinations are passed within one year after admission to the University.

### From Special to Regular Standing

Special students may be entered in regular standing and become candidates for graduation, on passing examinations in the required number of entrance subjects, provided such examinations are passed not later than two years after matriculation. In place of entrance examinations, university work to the amount of five units for each entrance deficiency may be offered in university subjects which are also included in the entrance group.

A special student who has completed one hundred and fifty units of university work, including all major requirements, and whose general university record is deemed proof of superior scholarship, may become a candidate for graduation on approval of the Committee on Admission and Advanced Standing. Petitions to this end will not be considered by the Committee until after the student has completed one hundred and twenty units of university work.

### University Credit for Extra Entrance Subjects

Credit toward graduation may be given for entrance subjects in excess of the number required for admission, provided such extra entrance subjects are also university subjects, and are successfully continued in the University within two years after matriculation, and provided the student's general University record is deemed proof of superior scholarship. In general, three units of advanced credit will be granted for each extra entrance unit representing elementary work in a given subject, and five units of advanced credit for each extra entrance unit representing advanced work. Applications for such university credit must be made within two years after matriculation. After matriculation additional entrance units may be offered only for the purpose of making up entrance deficiencies.

### University Credit for Special Courses

University credit is given only for work done in residence at the University. Work prescribed by any professor of such a nature that it cannot be done at the University or can be more advantageously done elsewhere may be regarded as work done in residence. But such special work must be duly registered in advance.

Matriculated students on leave of absence may take work in other universities, usually without any restrictions other than those imposed by the university in question. But work undertaken in any Summer Session may be subject to special regulations, and must be approved in advance by the major department and by the department in which the work is to be taken; and the last semester's work of every candidate for a degree must be taken in this University.

### Advanced Standing

Advanced standing for work done before matriculation will generally be given only when certified as having been completed in some institution of recognized collegiate rank, except as provided above (p. 67) for extra entrance units, or, in particular cases, to recommended graduates of approved State Normal Schools (see p. 62). But in special cases permission may be given by the Faculty to receive credit on examination for work equivalent to regular University courses. Application for such examinations, with satisfactory evidence of the work accomplished, must be presented to the Committee on Advanced Standing. Applications for advanced standing on the basis of work done before entering the University must be made within two years after matriculation.

### Leave of Absence

A student desiring to leave the University for a brief time should apply to the Committee on Registration. If leave of absence is desired on account of sickness, the petition must be endorsed by the professor of hygiene. A leave of absence is merely a justification of the absence and not a relief from the work that has been missed. A leave of absence is usually necessary only in case of interrupted work; a student in good standing absent one or more semesters may re-enter at the beginning of any semester without formal petition.

## Honorable Dismissal

An honorable dismissal means that the student is permitted voluntarily to withdraw from the University and is commended to the favorable consideration of any institution he may wish to enter. An honorable dismissal may be granted upon written application, to any student not under discipline for misconduct.

## EXPENSES OF THE STUDENT

## Fees

Graduate students in Law and Engineering, and all undergraduates, are charged a registration fee of *ten dollars* per semester; special students, *fifteen dollars* per semester. But these registration fees are waived in the case of *bona fide* residents of California who have been resident in the State at least one year immediately preceding registration. Students in laboratory courses pay for the materials which they use, and in various courses syllabus fees are charged. Laboratory and syllabus fees are different for the different courses, ranging from *fifty cents* to *twenty-five dollars* per semester (see under "Courses of Instruction").

## Cost of Living

The cost of living in Roble Hall, including board, room, light, heat, and attendance averages about twenty-seven dollars per month. Students furnish their own linen, blankets, towels, and napkins. Rooms may be reserved in advance by making a deposit of two dollars.

Rooms in Encina Hall, furnished similarly to those in Roble Hall, but without board, cost from \$6.00 to \$6.50 per month, with two in a room. There are a few single rooms at \$8.00 per month. Students occupying a double room alone pay the full price of the room. Each double room is furnished with two single beds. Rooms may be reserved in advance by making a deposit of two dollars.

Students may live outside the Halls only in places approved by the University.

In Palo Alto and College Terrace, at an average distance of a mile and a quarter from the University, rooms and board, in private houses, can be obtained, at from twenty-five to thirty dollars per month. A considerable number of students live in co-operative clubs, in which the cost of board and room is reduced as low as eighteen dollars per month; such rooms are

lighted and heated, but usually unfurnished. Special commutation tickets are issued by the Southern Pacific Company, and students living in towns on the line of the railway, from San Francisco to San Jose, easily go to and from the University daily. Carriages connect with all trains at Palo Alto.

On arriving at the University, new students may obtain information as to rooms and board at the Information Bureau conducted by the Christian Associations at the Palo Alto station and at the University. A complete list of approved rooms and boarding places will be provided. Particular inquiries may be addressed to the secretaries of the Christian Associations.

The University Inn, located near the quadrangle, has dining accommodations for about three hundred students.

Books and stationery will average from eighteen to twenty-five dollars per year.

The necessary expenses of the student, exclusive of clothing and railway fares, range from \$275 to \$400 per year.

#### Memorial Scholarship

The Leland Stanford Junior Scholarship, established by Mrs. Stanford, in 1900, pays the necessary expenses of its holder throughout the undergraduate course. The present holder of the scholarship is CARL AUGUSTUS LANTZ, of Colton, California.

#### Self-Support of Students

A considerable number of students manage, in one way or another, to earn the whole or a part of their expenses while attending the University. Such opportunities occur in the line of office and laboratory assistance, personal services of numerous kinds, the management of various student enterprises, agencies for laundries, etc.

The Student Employment Bureau (in charge of the Christian Associations) registers without charge all students who apply for employment, and supply employers with student labor as demanded. In general, the demand and supply are very nearly equal, but the attention of new students who intend to earn the whole or a part of their living is called to the following results of past experience:

1. There is a constant *over-supply* of those wishing to do teaching and clerical work. None but those having superior



qualifications and experience are likely to secure employment the first semester.

2. There is a considerable demand for efficient stenographers; also for men and especially women students who can do domestic labor of any kind; board and room rent may be earned by waiting on table, washing dishes, general housework, house cleaning, gardening, etc.

3. Students who can do any kind of domestic or manual labor *well*, and who have thoroughly good health, can earn their board by three hours' work per day, or board and room by four hours' work per day. Those who are bookbinders, printers, mechanics, or carpenters, will have a decided advantage in obtaining employment. *But no student should come to the University without resources sufficient for the expenses of one semester.*

4. The University curriculum is adapted to those who have control of their entire time for study. The student who must earn his living, therefore, should expect to take less than the usual amount of University work.

5. No student should come expecting to earn money, who can do nothing well; skill is absolutely essential, as competition is quite as severe in the college community as elsewhere.

6. Opportunities for earning money during the summer vacations can usually be counted on, the demand for canvassers being most constant.

Particular inquiries concerning opportunities for self-support should be addressed to the Secretaries of the Christian Associations. Upon arrival at the University new students should report for registration and information to the Information Bureau of the Associations.

#### UNIVERSITY HEALTH CONTROL

The University exercises an advisory control over student health affairs through the Committee on Public Health, whose Chairman is the University Health Officer.

Every student upon entering the University is required to report to the University Health Officer for a brief medical examination of his eyesight and general health. Any condition which may place a limitation on the amount or kind of work planned by the student is discussed with him or made the subject of a report to his major department or to the Committee on Registration.

Students intending to train for any of the athletic teams, or to register for gymnasium work, are required to pass a careful physical and medical examination at the beginning of each semester.

A careful inspection of all boarding and rooming houses in the community is carried out under the supervision of the Public Health Committee, and only those are permitted to register who arrange to live in houses which have been approved.

All students are entitled to medical consultation and to individual advice in other matters directly or indirectly relating to their health, at any time during the year; but no treatment is undertaken by the University.

#### Students' Guild

Provision for the care of all cases of serious illness is made by the Guild, which is a student organization now thoroughly equipped for its work. A hospital is owned and operated through the management of a Board of Directors composed of students and members of the faculty. Complete operating-room facilities and isolation-wards have been provided. The hospital is in charge of an executive nurse, with an adequate nursing and house-keeping staff.

All students are required to become members of the Guild by paying the fee, which for 1905-06 is two dollars each semester. A uniform hospital rate of one dollar per day is charged all members of the Guild.

The officers of the Guild for 1905-06 are as follows: President, RICHARD WATTS BARRETT, '04; Vice-President, EMMA HAYWARD, '06; Secretary, JAMES NICHOLS STANFORD, '06; Treasurer, HENRY ENNIS SAVAGE, '06.

## GRADUATION

Candidates may present themselves for graduation in January, May, and September.

No degree will be conferred upon any person who has not spent at least one year in resident study at the University. No honorary degrees are given.

### The High School Teacher's Certificate

The provisions of the State Board of Education (in effect August 1, 1906) are as follows:

1. High School certificates may be issued under the provisions of section 1521, subdivision 2, *a*, and section 1775, 1, *a*, of the Political Code of California, as follows:

To candidates who have received the Bachelor's Degree from a college requiring not less than eight years of high school and college training, and who submit evidence that in addition to the course required for the Bachelor's Degree, they have successfully completed at least one year of graduate study in a university belonging to the Association of American Universities, which year of graduate study shall include one-half year of advanced academic study (part of the time at least, being devoted to one or more of the subjects taught in the high school), and such other time in a well-equipped training school of secondary grade directed by the Department of Education of any one of the Universities of the Association, as may be necessary to fulfill the pedagogical requirements prescribed by this Board.

2. In lieu of the pedagogical training above prescribed, candidates may submit evidence showing that they are graduates of a California State Normal School, or other Normal School officially recognized by this Board as of equivalent rank, or have taught with decided success as regular teachers or as principals at least twenty months in any reputable school, elementary or secondary; and provided that until July 1, 1908, the practical teaching prescribed may have been pursued in schools of Grammar or secondary grade in connection with a California State Normal School or under the direction of the Department of

Education of the University of California or the Leland Stanford Junior University as evidenced by a certificate of proficiency.

3. The Institution granting the Bachelor's Degree, the institution in which the post graduate academic study is pursued, and the institution in which the pedagogical work is done, shall certify to the high character of the work accomplished under its direction and to the personal fitness of the candidate.

4. While having no power to legislate in the premises, the Board, in adopting the foregoing codification of its proposed procedure, does so in the understanding that the University of California and the Leland Stanford Junior University will not recommend their graduates for grammar school certificates, except as those desiring such certificates shall have received their pedagogical training in connection with the Normal School.

5. The minimum amount of pedagogy which Section 1521, Subdivision 2, *a*, directs the State Board of Education to prescribe, is hereby declared to be as follows:

Satisfactory completion of courses, suitable and essential to acquiring efficient skill in teaching and an intelligent comprehension of the scope and the attainable goals in high school instruction, said courses to be equivalent to not less than twelve hours per week for one-half year; provided that at least one-third of this work shall consist of practical teaching under the direction of supervising instructors of academic competency and breadth of pedagogic comprehension who for a period of not less than two years have taught the subjects in which they supervise.

6. The State Board of Education is not authorized by Section 1521 to specify institutions in which this prescribed pedagogy may be taken, but as standards of equivalents, the certificate from any institution belonging to the Association of American Universities, or from any California State Normal School, or their recognized equivalents, may be accepted, provided that the recommendation of applicants by faculties of institutions in which the pedagogical courses are pursued, attests that the requirements above stated have been fulfilled.

#### Recommendation of Teachers

The University undertakes (1) to keep a record of students and graduates who wish to teach, or to be transferred to other teaching positions, and (2) upon applications of Boards of Education, School Trustees, or other officials, to recommend for suitable vacancies such candidates as seem most likely to succeed.

Most high schools expect their teachers to handle two or three subjects. In order to meet this demand, students who intend to teach are urged to decide on their minor subjects as early as possible in their course, and to take sufficient work in them to meet the departmental requirements for recommendation.

The University does not solicit positions for its graduates, and reserves the right to refuse to recommend candidates enrolled. Information received from University instructors and others regarding the fitness of candidates is regarded as confidential, and general letters of recommendation are not given.

Blanks for registration may be obtained of the Secretary at the Registrar's office. They should be filled out each year, preferably during March or April.

#### BACHELOR OF ARTS

The degree of BACHELOR OF ARTS (A. B.) is conferred upon candidates who have satisfactorily completed a total of one hundred and twenty units of University work and who have also satisfied the requirements in major and minor subjects.

Thirty units constitute a normal year's work (see p. 65), but the ordinary class divisions (freshman, sophomore, junior, and senior) are not recognized by the University. The degree is conferred whenever the requirements are met, without regard to the time spent, except that at least thirty units (including the last fifteen) must be completed in this University.

Each student selects as his major subject or specialty the work of some one department. This department has the authority to require the completion of this *major* subject, and also of such *minor* subjects in other departments as may be considered necessary or desirable collateral work. Such major and minor requirements taken together will not (except in the departments of applied science) exceed forty units of University work, or one-third of the student's time during his undergraduate course.

With these exceptions, all the undergraduate work in all departments is elective. The student may freely choose for such elective work any subject taught in the University, which his previous studies have prepared him to undertake.

The department in charge of the major subject of any student is expected to act as adviser to the student in educational matters, and the recommendation of the department is necessary to graduation.

(A student in regular undergraduate standing who does not intend to become a candidate for the A. B. degree, may choose, with the approval of the major department, any courses in the University which his previous training has prepared him to undertake.)

### Candidacy for Advanced Degrees

Every applicant for an advanced degree must file at the Registrar's office not later than the beginning of the semester preceding that in which the degree is sought, a formal application including a statement of the proposed course of study. This application must be approved by the department faculty concerned, and upon acceptance by the Committee on Graduation the applicant is admitted to candidacy for such advanced degree. It is advisable that such application be made as early as possible in the student's course. Where a thesis is required it shall be upon a subject approved by the department, and, if for the doctor's degree, shall be presented in its final form at least six weeks before the close of the semester in which the degree is sought. Accepted theses for the master's degree, shall be bound in a uniform style and deposited in the University Library. No advanced degree will be conferred except upon the recommendation of the Committee on Graduate Study.

### MASTER OF ARTS

The degree of MASTER OF ARTS (A. M.) is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion, in residence, of one year of graduate work, beyond the baccalaureate requirements of the department in which the degree is sought, and on the presentation of an approved thesis, or the passing of a satisfactory examination, or both. At least two-thirds of the year's work required of the candidate is to be devoted to the major study. Work done in the University outside of the requirements for the degree must be registered, but will not be taken into account in connection with the degree.

Special regulations are as follows:

1. A report upon the character of the work done will be made by each instructor under whom a candidate is registered.
2. Some evidence of ability to do original work is required of

every candidate. In addition, therefore, to examination, a thesis is expected, unless such evidence is furnished in other ways.

#### ENGINEER

In the departments of applied science the professional degree of ENGINEER is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion, in residence, of one year of professional study beyond the baccalaureate requirements of the department in which the degree is sought, and on the presentation of an approved thesis, showing ability to do independent work.

#### JURIS DOCTOR

The degree of JURIS DOCTOR (J. D.) is conferred upon students who have previously received the academic degree of Bachelor of Arts, or its equivalent, upon the completion of a three years' professional law course as defined by the Department of Law.

#### DOCTOR OF PHILOSOPHY

The degree of DOCTOR OF PHILOSOPHY (Ph. D.) is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion of at least three years of graduate work, beyond the baccalaureate requirements of the department in which the degree is sought, under the following conditions:

1. The degree is given only on the ground of advanced scholarship and the ability to do independent work in some special line, and not for merely faithful study for a prescribed time or course, nor for miscellaneous study. Three years represents the minimum time in which the degree can be obtained and often a longer period of study will be necessary.

2. Graduate work done elsewhere may be accepted in place of resident study in this University; but in no case will private study without sufficient guidance, or pursued at a distance from libraries or laboratories or other necessary facilities, be accepted as an equivalent; and no degree will be granted to any person who has not spent at least the last year of such study in residence at this University.

3. All candidates will be required to show a reading knowledge of French and German, and this requirement must be fulfilled

at least one year before the final examinations for the degree. The candidate's ability to read his special literature in these languages shall be tested by the faculty of the department in which the major subject is taken.

4. The course of study shall embrace one major subject and one or two minors. The minor subject or subjects shall represent approximately one-third of the course of study; except that such minor subjects may be waived on the recommendation of the department in which the major subject is taken and with the approval of the Committee on Graduate Study, when the breadth and extent of the candidate's training justify such a course,—in which case the candidate will be expected to show such breadth of training in his oral examinations.

In the nature of the case the work offered as minors cannot always be graduate work, but it should be advanced work and should, whenever possible, be planned as a part of the course leading to the Ph. D. degree. If the work has been done before the student enters this University it shall be passed upon by the department in which it would have been done if taken here. This Department is free to test the candidate as it sees fit.

5. The candidate must present a thesis of such a character as shall display power of original and independent investigation and constitute an actual contribution to knowledge. He must guarantee the printing of the thesis, in a form approved by the Committee on Graduate Study, within one year after the degree is conferred, and must deposit one hundred copies in the University Library.

6. The candidate must sustain final written examinations in major and minor subjects conducted by the department in which the study was taken and also shall submit to an oral test or examination by the special Examining Committee of the Faculty.

The special Examining Committee shall consist in each case of (1) the professor in charge of the major subject, (2) the one or more professors in charge of the minor subjects, (3) two members of the Committee on Graduate Study whose departments lie nearest to that of the major professor, and (4) the Chairman of the Committee on Graduate Study, acting as its secretary.



# COURSES OF INSTRUCTION \*

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## GREEK

AUGUSTUS TABER MURRAY, Professor.

HENRY WINCHESTER ROLFE, Associate Professor.

ERNEST WHITNEY MARTIN, Instructor.

With the co-operation of Professor FAIRCLOUGH, and Assistant Professors ELMORE and FOSTER, of the Department of Latin.

### UNDERGRADUATE COURSES

Instruction in the lower classes is given chiefly by means of recitations, but as the student advances these are supplemented by lectures.

It will be seen that provision is made for those who have had no Greek before coming to the University.

#### The Teacher's Recommendation

Courses 2, 3, 4, 5, and 17 constitute the minimum requirement for the high school teacher's recommendation in Greek.

**1. Elementary.**—Grammar; translation of easy prose; Greek composition. After the essential grammatical forms have been mastered, passages of continuous prose are taken up for translation, and, as soon as is practicable, the *Anabasis*. The student is made familiar with the ordinary forms of syntax, and exercises in writing Greek are regularly introduced. This course does not count as a part of the major work for students in Greek.

5 units, both semesters (ROLFE)

**2. Plato and Lysias.**—The *Apology* and *Crito*, and selections from *Lysias*. Course 2 is open to those who have offered subject 22 on entrance, or who have completed course 1 in the University.

3 units, 1st semester (ELMORE)

**3. Herodotus and Homer.**—A continuation of course 2; Selections from *Herodotus* and the *Odyssey*.

1 unit, 2d semester (ROLFE)

\*The Announcement of Courses for 1906-07 will be published about May 25, 1906.

**4. Prose Composition and Sight Translation.**—Simple prose is taken up for sight reading, and the exercises are based upon the text read. Course 4 is required of all students in courses 2 and 3 who are making Greek their major study.

2 units, both semesters (MARTIN, ELMORE)

**5. Syntax.**—Lectures and exercises on Greek syntax, treated from a practical rather than a theoretical standpoint.

1 unit, 1st semester (MURRAY)

**6. Geography.**—Lectures and exercises on the geography of the Greek world and the geographical ideas of the Greeks from the earliest times.

1 unit, 2d semester (ROLFE)

**7. Homer.**—A critical study of the Iliad, with discussions and papers on Homeric topics. Open to those who have completed courses 2 and 3, or an equivalent.

3 units, 1st semester (MURRAY)

**8. Oratory.**—Jebb's Selections from the Attic Orators, with lectures. A continuation of course 7

3 units, 2d semester (MARTIN)

**9. Prose Composition and Sight Translation.**—Selections for translation are made from the historical and philosophical writers. Various practical exercises in Greek composition are prepared, according to the needs of the class. Open only to those who have completed course 4, or an equivalent, but required of major students before graduation.

2 units, both semesters (FOSTER, FAIRCLOUGH)

**10. History of Greece.**—A general outline course, with a brief preliminary survey of the Oriental civilizations. Open to all students. [This course given in alternation with courses 11 and 12, and with the corresponding course in the History of Rome, was not given in 1905-06.]

2 units, both semesters (ROLFE)

**11. Greek Religion, Mythology, and Ritual.**—Lectures, illustrated by stereopticon.

2 units, 1st semester (ROLFE)

**12. Greek Art.**—With especial reference to Sculpture and Vase Paintings. Lectures, illustrated by stereopticon. [Courses 11 and 12 were not given in 1905-06.]

2 units, 2d semester (ROLFE)

**13. Private Life of the Greeks.**—Lectures, illustrated by stereopticon. 2 units, 2d semester (MARTIN)

**14. Greek Tragedy.**—The Prometheus of Aeschylus, the Antigone and Electra of Sophocles, and the Hippolytus and Iphigenia Taurica of Euripides are read and interpreted. Other plays are assigned for private study, and lectures on the drama are from time to time given. 3 units, both semesters (MURRAY)

**15. Plato and Demosthenes.**—The Phædo and the De Corona are read and interpreted. 3 units, 1st semester (ROLFE)

**16. Thucydides.**—Books VI and VII, the Sicilian Expedition. [Courses 15 and 16, alternating with course 14, were not given in 1905-06.] 3 units, 2d semester (ROLFE)

**17. Teachers' Course.**—Lectures and practical exercises. 2 units, 1st semester (MURRAY)

**18. Bucolic Poetry.**—Selected Idylls of Theocritus, Bion and Moschus, and the Eclogues of Vergil are read and interpreted. [Students completing this course will receive 1 unit credit in each department.] [Not given in 1905-06. See course 20.]

2 units, 2d semester (MURRAY)

**19. Lyric Poetry.**—Readings and lectures. [Not given in 1905-06.] 2 units, 2d semester (FAIRCLOUGH)

#### GRADUATE COURSES

The center of the Graduate work is the Greek Seminary—made up of the director and such students as satisfy him of their fitness for the work. The Seminary meets weekly for the critical interpretation of some Greek author, the different members, in turn, filling the post of interpreter. Topics for investigation are assigned, and papers prepared by the members are read and discussed.

Members of the Seminary are expected to supplement their critical work by a wide reading, and lectures on the author or authors under discussion are given by the director. It is in the highest degree desirable that all members of the Seminary should be able to read both French and German.

**20. The Greek Seminary.**—In 1905-06 the Seminary was occupied with the study of the Bucolic poets. Selected Idylls of Theocritus were taken up for interpretation, and lectures by the director accompanied the work of the Seminary.

2 units, both semesters (MURRAY)

## SPECIAL LECTURES

Throughout the year Professor MURRAY gives lectures, twice weekly, on Greek Epic and Dramatic Poetry. These lectures are intended for general literary students, and do not presuppose a knowledge of Greek; they will not count as a part of the major work of the students in Greek.

**22. The Greek Epic.** 2 units, 1st semester (MURRAY)

**23. Greek Tragedy.** 2 units, 2d semester (MURRAY)

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 LATIN

HENRY RUSHTON FAIRCLOUGH, Professor.

JEFFERSON ELMORE, BENJAMIN OLIVER FOSTER, Assistant Professors.

ERNEST WHITNEY MARTIN, Instructor.

With the co-operation of Professor MURRAY and Associate Professor ROLFE of the Department of Greek.

## UNDERGRADUATE COURSES

The aim of the undergraduate courses in Latin is to give the student a somewhat systematic knowledge of the language and its development, an acquaintance with the representative authors of Latin literature, and some insight into the life, culture, and civilization of ancient Rome.

## The Teacher's Recommendation

Students who complete twenty units of the work accepted as part of the major requirements in Latin, including two courses of Prose Composition, and in addition the Teachers' Course in Latin, may receive a recommendation from the Department to teach Latin as a minor subject.

**1. Vergil and Cicero.**—Vergil, selected books of the *Æneid*; Cicero, selected orations; exercises in Latin composition. This course is planned for those who have passed in entrance subject 21a. Course 1 does not count as major work for students in Latin. 3 units, both semesters (MARTIN)

**2. Terence, Cicero, and Horace.**—Terence, *Andria*; Cicero, *De Senectute*; Horace, *Odes* and *Epodes*. Open to students who

have completed course 1, or who have offered entrance subject 21b.

3 units, both semesters (ELMORE, FOSTER, MARTIN, MURRAY)

**3. Terence, and Selections**, illustrative of Roman life.—A reading course, intended mainly for students who have not taken course 2 in the first semester. 3 units, 2d semester (MARTIN)

**4. Prose Composition I.**—Open to those taking course 2, and required of all major students in Latin. The work in composition is accompanied by a study of Eutropius, Quintus Curtius, Cæsar, Civil War, and Cicero, Scipio's Dream.

2 units, both semesters (MARTIN)

**5. Horace.**—Satires and Epistles. Open to those who have completed course 2 or 3. Attention is directed especially to the style and subject matter, to Horace's influence upon later literature, and to the salient features of the Augustan age.

3 units, 1st semester (FAIRCLOUGH)

**6. Livy and Tacitus.**—Selections from Livy's History and the Annals of Tacitus. This course, complementary to course 5, involves a survey of Roman history and the literature of the early empire.

3 units, 2d semester (ELMORE)

**7. Prose Composition II.**—Open to students who have taken course 4. In addition to the work in composition, the class reads the Catiline of Sallust and the Agricola and Germania of Tacitus. Exercises for translation into Latin are prepared to suit the needs of the class.

2 units, both semesters (ELMORE)

**8. Plautus.**—In this course the Rudens of Plautus is studied with particular reference to the early forms, constructions, and meters; and that followed by the more rapid reading of the Captivi and Menæchmi. Considerable attention is paid to a comparison between ancient and modern comedy, the development of Latin comedy, the early theatre, and the method of presenting a play.

2 units, 1st semester (FOSTER)

**9. The Letters of Cicero.**—The aim is to get a view of Cicero and his times from the original sources, to ascertain the causes for the breaking down of the Republic, and to become familiar with official procedure in the judicial and legislative bodies. Special attention is paid to the style of the letters.

2 units, 2d semester (FOSTER)

**10. Suetonius and Pliny.**—Selections from the Biographies of Suetonius and the Letters of Pliny.

2 units, 1st semester (FOSTER)

**11. Catullus, Tibullus, and Propertius.**—Selections from these authors are studied, largely with reference to the thought and artistic form, and compared with similar poems of other writers.

2 units, 2d semester (FAIRCLOUGH)

**12. Lucretius.**—Selections from the *De Rerum Natura* are read with particular attention to the philosophic thought and its poetic treatment.

2 units, 1st semester (ROLFE)

**13. Prose Composition III.**—A course for third-year students.

1 unit, both semesters (FAIRCLOUGH)

**14. Juvenal and Martial.**—Selections from the *Satires* of Juvenal and the *Epigrams* of Martial, with supplementary reading in other writers of the first century.

2 units, 1st semester (ELMORE)

**15. Quintilian and Cicero.**—Book X, with selections from Cicero, *De Oratore*. Rhetoric and literary criticism among the Romans.

2 units, 2d semester (FOSTER)

**16. Prose Composition IV.**—Translations from English authors. For advanced students.

1 unit, both semesters (FAIRCLOUGH)

**17. Teachers' Course.**—Lectures on methods of teaching Latin, with practical exercises. Open only to advanced students.

2 units, 2d semester (FAIRCLOUGH)

**18. Roman Law.**—This course, based upon the *Commentaries* of Gaius, deals with the leading principles and history of Roman Law, and its survival in modern times. Open to all who have some knowledge of Latin, and intended especially for students in Law.

2 units, 1st semester (FAIRCLOUGH)

**19. History of Roman Literature.**—A survey of the subject with assigned readings. Intended especially for major students in Latin.

2 units, 2d semester (ROLFE)

**20. Roman History from Original Sources.**—A careful study of a selected period. [Not given in 1905-06.]

2 units, 2d semester (FOSTER)

- 21. The Roman Novel.**—The *Cena Trimalchionis* of Petronius, and the story of Cupid and Psyche from the *Golden Ass* of Apuleius.  
2 units, 2d semester (FOSTER)

#### GRADUATE COURSES

These courses are open to graduates in Latin who have had at least two years' undergraduate work in Greek. The ability to read French and German is also very desirable, and, in the case of candidates for the degree of Ph. D., necessary. The aim of the courses is to give the student a thorough grasp and detailed knowledge of particular authors, and of certain periods and fields of literary activity, as well as a training in literary criticism, and an acquaintance with the methods of original research.

- 22. Latin Seminary.**—In 1905-06 the Seminary is devoted to Vergil, especially the *Bucolics* and *Æneid*. The latter is studied in its entirety as a work of art, and selected passages in the first six books are interpreted. Attention is paid to Vergil's influence on mediæval and modern literature. The course is of special importance to teachers of Latin. (Students should provide themselves in advance with a complete text of Vergil, such as that in the Oxford or Teubner series.)

2 units, both semesters (FAIRCLOUGH)

- 23. Reading.**—A careful reading of the text of Vergil in connection with the Seminary work.

2 units, 1st semester (FAIRCLOUGH)

- 24. Introduction to Latin Palæography.**—Lectures and practice in reading fac-similes of manuscripts. Included in seminary work.

(FAIRCLOUGH)

- 25. Introduction to Latin Epigraphy.**—Lectures and readings in the *Corpus Inscriptionum*.

1 or 2 units, 2d semester (MARTIN)

- 26. Historical Grammar.**—Lectures on the sounds and inflections of Latin.

2 units, 2d semester (FOSTER)

- 27. The Elements of Oscan and Umbrian.**—The study of the grammar will be accompanied by a reading of the more important inscriptions. [Not given in 1905-06.]

2 units, 2d semester (FOSTER)

- 28. History of Classical Philology.**—Lectures.

1 unit, 1st semester (ELMORE)

## SPECIAL COURSES

**29. History of Rome.**—A general course, open to all students. 3 units, both semesters (ROLFE)

**30. Roman Poets.**—Selections in translation, with lectures and prescribed reading. This course is intended for general literary students. [Not given in 1905-06.]

2 units, 1st semester (FAIRCLOUGH)

**31. Roman Art and Monuments.**—A survey of the topography, architecture, sculpture and other art-forms of ancient Rome and the provinces, illustrated with lantern-slides. This course is open only to students who have some knowledge of Roman history. 2 units, 2d semester (FAIRCLOUGH)

**32. Roman Private Life.**—Lectures, with illustrations from ancient art and other sources. Open to all, but of special importance to Latin students. 2 units, 1st semester (MARTIN)

**33. Roman Political Institutions.**—Lectures and assigned reading on the development and operation of the most important features of the Roman government. Open to all students.

2 units, 2d semester (ELMORE)

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GERMANIC LANGUAGES

GEORGE HEMPL,\* JAMES OWEN GRIFFIN,† Professors.

KARL G. RENDTORFF, WILLIAM ALPHA COOPER, MACY MILLMORE SKINNER, Assistant Professors.

CHARLES FREDERICK SCHMUTZLER, Instructor.

CHARLES PHILLIPS, JEAN DU BUY, Assistants.

The aim of the Department is to give the student in the elementary courses a thorough knowledge of German grammar and the ability to read with ease simple German texts taken from the works of the classic writers; in the advanced courses, to give a thorough training in the whole field of German literature and philology.

## The Teacher's Recommendation

Students who intend to teach German are expected to include courses 6, 8, 9, 11, 12, 13, 14, 15, and 16.

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\*Beginning January, 1907.

†Absent on leave, second semester, 1905-06.



**1. Elementary.**—German grammar, translation of easy prose and poetry, composition, exercises in spoken German. Three five-hour sections and one three-hour section. The last open only to those students who have had some German but not enough to enable them to pass the entrance examination in German. 3 and 5 units, both semesters

(GRIFFIN, COOPER, SKINNER, SCHMUTZLER, PHILLIPS)

**2. Second-Year German.**—Continuation of the grammatical work done in Elementary German. A careful study of some of the German classics. [In 1905-06 Lessing's *Minna von Barnhelm*, selections from Heine's *Prose and Poems*, and Goethe's *Egmont* were studied. In 1906-07 Keller, Grillparzer, Goethe, and Schiller will be studied.] 3 units, both semesters

(GRIFFIN, COOPER, SKINNER, SCHMUTZLER, PHILLIPS)

**3. Rapid Reading.**—Rapid translation of modern German prose; writing of German from dictation; paraphrasing of the German text. This course should be taken in connection with course 2a, which it is intended to supplement. As far as it is practicable, the course will be conducted in German.

2 units, both semesters

(GRIFFIN, COOPER, SKINNER, PHILLIPS, DU BUY)

**4. Advanced German Grammar.**—This course will consist of a review of the sounds, inflections, and the elements of syntax, with special emphasis on the history of the sounds and the corresponding sounds in English, word-formation (roots, formative elements, derivation by ablaut, prefix, suffix, compounds), and idioms. Lectures and practical exercises, conducted as far as practicable in German. 2 units, both semesters (COOPER)

**5. Modern German Drama.**—Lectures in connection with the interpretation and rapid reading of some of the more important works of the modern dramatists: Heyse, Wilbrandt, Sudermann, Hauptmann, Wildenbruch, etc.

2 units, both semesters (GRIFFIN, SKINNER)

**6. Classical German Drama.**—This course aims to be an introduction into the spirit of the classical German drama from a literary standpoint. [In 1905-06 Goethe's *Iphigenie* was studied during the first semester; the second semester was devoted to the study of Schiller's *Wallenstein*.] During both semesters one

hour a week is given to the reading of literary, scientific, and historical German prose.

3 units, both semesters (GRIFFIN, RENDTORFF, DU BUY)

**7. Modern German Novels.**—Reading of standard modern novels with lectures on the development of the novel.

2 units, both semesters (SKINNER)

**8. German Composition.**—Translation of graded exercises covering the most important parts of German syntax.

2 units, both semesters (SCHMUTZLER)

**9. Deutsche Stilübungen.**—Writing of essays in German. The class will be conducted in German.

2 units, both semesters (RENDTORFF)

**10. History of German Civilization.**—This course is intended for students of German who wish to become acquainted with German history and the development of German civilization in their relation to German literature.

2 units, both semesters (RENDTORFF)

**11. Goethe.**—Study of Goethe's life and work as a whole, with interpretation of poems representative of his various periods. Lectures and recitations. [In 1906-07 Faust, First and Second Parts, will be studied.]

2 units, both semesters (COOPER)

**12. History of German Literature from the Earliest Times to the Eighteenth Century.**

2 units, both semesters (RENDTORFF)

**13. History of German Literature during the Eighteenth and Nineteenth Century.**—Lectures given in German.

2 units, both semesters (RENDTORFF)

**14. Teacher's Course.**—This course is intended for students who expect to become teachers of elementary German. Lectures and exercises. 2 units, both semesters (COOPER)

#### GRADUATE COURSES.

The graduate courses are intended especially for those students who are candidates for the advanced degrees of M. A. and Ph. D. The scientific methods of original and critical research are taught and practiced. Special attention is paid to the needs of those who intend to make the teaching of German their later profession.

Rare opportunities for graduate work in German are offered by the library of the late Professor Hildebrand of Leipzig, which contains a rich and well-chosen collection of works in German philology and literature.

**15. Syntax.**—Selected chapters of German Syntax.

2 units, both semesters (RENDTORFF)

**16. Middle-High German.**—During the first semester, grammar and reading from Weinhold's Lesebuch. Second semester, reading and interpretation from Bartsch, Liederdichter des 12-14 Jahrhunderts. [In 1906-07 Kudrun will be read in the second semester.]

2 units, both semesters (RENDTORFF)

**17. Old-High German.**—Grammar with readings from Braune's Lesebuch 2 units, both semesters (——)

**18. Old Norse.**—Grammar, with readings from Holthausen's Lesebuch. In the second semester, interpretation of the older Edda in its relation to the Nibelungenlied.

2 units, both semesters (——)

**19. Gothic.**—Grammar and interpretation of select passages from Wulfila. 2 units, both semesters (SKINNER)

**20. Comparative German Grammar.**—Lectures.

2 units, 2d semester (——)

**21. Middle-High German Proseminary.**—Study of the period of the Minnesingers.

2 units, both semesters (RENDTORFF)

**22. Modern German Proseminary.**—In 1905-06 the first semester was devoted to the study of the works of Conrad Ferdinand Meyer, the second semester to the study of the German Romantic School.

2 units, both semesters (GRIFFIN, RENDTORFF, SKINNER)

**23. German Seminary.**

2 units, both semesters (——)

## ROMANIC LANGUAGES

JOHN ERNST MATZKE, Professor.

OLIVER MARTIN JOHNSTON, Associate Professor.

COLBERT SEARLES, Assistant Professor.

STANLEY SMITH, CLIFFORD GILMORE ALLEN, HOMER PRICE EARLE,\*  
Instructors.

MARIE CAROLINE DUBY, BEATRICE LESSEY, Assistants.

The undergraduate courses in the Romanic Languages are planned so as to give students an intimate acquaintance with the modern forms of the languages spoken in the principal neo-latin countries. To this end systematic attention is paid to pronunciation, reading, syntax, and conversation. In the higher courses special emphasis is laid on the study of literature. In order to give students an opportunity to become familiar with the spoken idioms, several of the advanced courses are conducted as much as possible in the language which forms the object of study.

Students will have the opportunity of selecting either French or Spanish as their major subject. In French the minimum requirement consists of courses 2, 3, 4, 5, 6, 7, 8, and 9. In Spanish a similar requirement will include courses 10, 11, 12, 13, 14, 15, 16, and 17.

## The Teacher's Recommendation

The minimum requirement for the high school recommendation is as follows:—In French: courses 2, 3, 4, 5, 8, 20, 21; in Spanish: courses 10, 11, 12, 13, 14, 16. Recommendations will be given only on the vote of the department and will demand a degree of scholarship above the ordinary passing mark.

**1. Elementary French.**—Fraser and Squair's French Grammar and Reader with written and oral exercises and systematic training in French pronunciation on the basis of Matzke's Primer of French Pronunciation; Aldrich and Foster's French Reader. Open to all, but students desiring to enter after the end of the second week will\* be admitted only upon special examination.

3 units, both semesters (SEARLES, JOHNSTON, ALLEN)

**2. Modern French Syntax.**—Fraser and Squair, French Grammar. Open to students who have completed course 1, or who have received credit for entrance subject 19a.

2 units, both semesters (SEARLES, SMITH)

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\*Beginning August, 1906.

**3. Modern French Reading.**—O'Connor, *Choix de Contes Contemporains*; Daudet, *Tartarin de Tarascon*; Balzac, *Eugénie Grandet*; Hugo, *Hernani*; Rostand, *Cyrano de Bergerac*. Open to students who have completed course 1, or who have received credit for entrance subject 19a. [The section meeting at 9:15 will be open only to students selecting course 2, or having completed it, and will be devoted to more special study of syntax in connection with the reading. The remaining sections are intended to give general opportunity for obtaining a more perfect reading knowledge of the language.]

2 units, both semesters (SEARLES, SMITH)

**4. French Conversation.**—There will be three meetings of the class during the week, for which two units of credit will be given toward graduation. Open to students who have completed course 1, or who have received credit for entrance subject 19a.

2 units, both semesters (JOHNSTON, SMITH)

[Courses 2, 3, and 4 constitute the second year's work in French, and should, if possible, be taken during the same year. Course 4 may not precede course 2.]

**5. Classical French.**—A study of the principal authors of the classical period. Representative texts will be read from the works of Corneille, Racine, Molière, Voltaire, Le Sage, La Fontaine, and Boileau. Open to students who have completed courses 2 and 3, or their equivalent.

3 units, both semesters (JOHNSTON)

**6. History of French Literature from the Renaissance to the Romantic Movement.**—Lectures supplemented by reading and reports by the members of the class. Students will need Kastner and Atkins, *A Short History of French Literature* (Holt & Co.), and Lanson, *Histoire de la Littérature française* (Paris, Hachette). Open to students who have completed courses 2 and 3, or their equivalent.

2 units, both semesters (SEARLES)

**7. History of French Literature in the Nineteenth Century.**—Lectures, with reading of the principal authors and reports by the members of the class. Students should provide themselves with Pellissier, *Le mouvement littéraire au XIXe siècle* (Paris, Hachette 1889). Open to students who have completed courses 5 or 6.

2 units, both semesters (MATZKE)

**8. Advanced French Prose Composition.**—Translation into French of selected English prose. Open to students who have completed course 2, or its equivalent.

2 units, both semesters (MATZKE)

**9. French Themes.**—The course will be conducted in French. Open to students who have completed courses 2, 3, 4, and 8, or their equivalent.

1 unit, both semesters (JOHNSTON)

**10. Elementary Spanish.**—Hills and Ford, *A Spanish Grammar*; Matzke, *First Spanish Readings*; Alarcón, *Novelas Cortas Escogidas*. Open to all.

3 units, both semesters (ALLEN, SMITH)

**11. Modern Spanish Syntax.**—Ramsey, *A Text-book of Modern Spanish*. Open to students who have completed course 10, or who have received credit for entrance subject 18a.

2 units, both semesters (ALLEN)

**12. Modern Spanish Reading.**—Moratín, *El Sí de las Niñas*; Emilia Pardo Bazán, *Pascual López*; Echegaray, *ÓLocura ó Santidad*; Caballero, *La Familia de Alvareda*; Nuñez de Arce, *El Haz de Lefía*. Open to students who have completed course 10, or who have received credit for entrance subject 18a.

2 units, both semesters (ALLEN, SMITH)

**13. Spanish Conversation.**—There will be three meetings of the class during the week, for which two units of credit will be given toward graduation. Open to students who have completed course 10, or its equivalent.

2 units, both semesters (ALLEN, SMITH)

[Courses 11, 12, and 13 constitute the second year's work in Spanish, and should, if possible, be taken during the same year. Course 13 may not precede course 11.]

**14. Classical Spanish.**—Cervantes, *Don Quijote*; Lope de Vega, *La Estrella de Sevilla*; Calderón, *La Vida es Sueño*, and *El Mágico Prodigioso*; Téllez, *Don Gil de las Calzas Verdes*; Moreto, *El Desdén con el Desdén*; Ford, *A Spanish Anthology*. Open to students who have completed courses 11 and 12.

2 units, both semesters (——)

**15. Advanced Spanish Composition.**—Translation into Spanish of selected English prose. Open to students who have completed course 11, or its equivalent.

1 unit, both semesters (ALLEN)

**16. Spanish Themes.**—The course will be conducted in Spanish. Open to students who have completed courses 11, 12, 13, and 15, or their equivalent.

1 unit, both semesters (——)

**17. History of Spanish Literature.**—Lectures, with reading of important works and reports by the members of the class. Students should provide themselves with Butler Clarke's *Spanish Literature* (Macmillan & Co., New York). Open to students who have completed course 14, or its equivalent.

3 units, both semesters (——)

**18. Elementary Italian.**—Young, *An Italian Grammar*; Bowen's *First Italian Readings*; Manzoni, *I Promessi Sposi*. Open to students who have completed French, course 1, or Spanish 10, or who have received credit for entrance subject 18a or 19a.

3 units, both semesters (JOHNSTON)

**19. Advanced Italian.**—Dante, *La Divina Commedia*. Open to students who have completed course 18.

2 units, both semesters (——)

#### TEACHERS' COURSES

**20. Phonetics.**—Lectures on the organs of speech and the nature and formation of speech sounds with special reference to the pronunciation of French. Intended particularly for teachers of language. Open only to advanced students.

2 units, 1st semester (MATZKE)

**21. Teachers' Course in French.**—Lectures on methods of teaching French, study of the available text-books and practical exercises in teaching French. Open only to advanced students.

2 units, 2d semester (MATZKE)

[Courses 20 and 21 are given in alternate years; they will be given in 1906-07.]

#### GRADUATE COURSES

Courses of instruction for graduate students in Romanic philology and literature lead to the degrees of Master of Arts and Doctor of Philosophy and are planned for the benefit of specialists, particularly of such as are intending to become teachers of the Romanic languages. Admission to regular standing in this department presupposes an undergraduate curriculum of study which has included Latin and French, and has afforded

proficiency in at least one of the principal languages of the Romanic group (French, Spanish, or Italian). In addition to this, a good reading knowledge of German (for purposes of advanced study) is requisite.

**22. History of Old French Literature.**—Lectures on the history and development of French Literature from the beginning to the end of the fifteenth century.

2 units, both semesters (MATZKE)

**23. French Historical Grammar.**—Lectures on Old French Phonology and Morphology. Students should provide themselves with Schwan-Behrens, *Grammaire de l'Ancien Français*, traduction de Bloc (Leipzig, Reisland, 1900), Suchier, *Altfranzösische Grammatik* (Halle, Niemeyer, 1893), Körting, *Lateinisch-Romanisches Wörterbuch* (Schöningh, Paderborn, 1901). One hour every week will be given up to practical philological exercises based on Paris's edition of *La Vie de Saint Alexis* (Paris, Vieweg, 1903), and Suchier's edition of *Aucassin et Nicolette* (Schöningh, Paderborn, 1899).

3 units, both semesters (MATZKE)

**24. Old French Texts.**—Translation of Old French texts from Bartsch, *Chrestomathie de l'Ancien Français*, revue par Horning, Leipzig, Vogel, 1901. 2 units, both semesters (JOHNSTON)

**25. Old French Syntax.**—Lectures.

1 unit, both semesters (JOHNSTON)

**26. Old Spanish.**—Old Spanish Grammar with readings from Gorra, *Lingua e Letteratura Spagnuola delle origini* (Hoeppli, Milan, 1898). [Course 26 will not be given during 1906-07.]

2 units, 1st semester (MATZKE)

**27. Popular Latin.**—Lectures.

2 units, 2d semester (MATZKE)

**28. Seminary.**—In 1905-06 the Seminary was occupied with the study of Molière. 2 units, both semesters (MATZKE)

**29. Journal Club.**—The instructors in the department and the advanced students meet regularly on alternate Thursdays for the discussion of the periodicals and new books.



## ENGLISH LITERATURE AND RHETORIC

MELVILLE BEST ANDERSON, Professor.

ALPHONSO GERALD NEWCOMER, Associate Professor.

RAYMOND MACDONALD ALDEN, SAMUEL SWAYZE SEWARD, JR.,  
HOWARD JUDSON HALL, LEE EMERSON BASSETT, Assistant  
Professors.

EDWARD KIRBY PUTNAM, JOHN KESTER BONNELL,\* HENRY DAVID  
GRAY, Instructors.

ANNA PEARL COOPER, EDITH R. MIRRIELES, JENNET JOHNSON,  
Assistants.

## Requirements for the Degree of Bachelor of Arts

a. The courses in Chaucer, Shakspeare, Milton, the Literature of the Eighteenth Century, the History of English Literature to the time of Dryden, besides such preliminary and other courses as may be requisite in each individual case.

b. Acquaintance with good usage in speech and the ability to write printable English.

c. A sound knowledge of at least one foreign language and its literature (ordinarily interpreted as requiring a minimum of 16 hours in the chosen language, not including Latin 1, German 1, or French 1).

## The Teacher's Recommendation in English

Besides fulfilling the major requirements for the degree of Bachelor of Arts, students who desire the recommendation of the department as teachers of English will be expected to take courses in Vocal Expression, Anglo-Saxon and Linguistic History, Versification, the Literature of the Nineteenth Century, the Teachers' Course in English, English and American History, and some branch of Biology (Physiology preferred). No candidate who is unable to give a satisfactory vocal interpretation of a piece of literature will receive the recommendation of the Department.

The minimum requirement for the teachers' recommendation, with English as a minor subject, is as follows: Vocal Expression (4 hrs.); Composition (4 hrs.); Shakspeare (3 hrs.); Milton (3 hrs.); Chaucer (3 hrs.); 18th Century Literature (3 hrs.); 19th Century Literature (3 hrs.); Teachers' English or Anglo-Saxon (3 hrs.).

\*Absent on leave, 1905-06.

## UNDERGRADUATE COURSES

1. **Principles of Vocal Expression.**—A general course in vocal training, the use of the voice in reading and speaking, and the elements of interpretative reading, with practice in the preparation and delivery of short speeches. Open to all.

2 units, both semesters (BASSETT)

2. **Vocal Training.**—A study of the action of the imagination in the vocal interpretation of literature. Open to all who have passed in course 1.

2 units, 1st semester (BASSETT)

3. **Vocal Interpretation of Literature,** based on studies in Shakspeare, Browning, and Tennyson. Open to all who have passed in courses 1 and 2.

2 units, 2d semester (BASSETT)

4. **Public Speaking.**—Practice in the preparation and delivery of speeches, with a study of masterpieces of oratory. Open to all who have passed in courses 1 and 8.

2 units, 2d semester (BASSETT)

5. **Introduction to Prose.**—A general course, in which certain works of Johnson, De Quincey, Carlyle, and Lowell, are studied with special reference to the qualities and varieties of prose style. Open to first and second year students of all departments; to third and fourth year students by special permission only.

3 units, 1st semester (NEWCOMER, HALL, GRAY, COOPER)

6. **Introduction to Poetry.**—Similar to course 5, with a substitution of the modern poets; a study of the nature, methods, and varieties of poetry, the elements of poetic form, and the elements of poetic criticism. Open upon the same conditions.

3 units, 2d semester (HALL, GRAY, COOPER)

7. **Prose Narrative Literature.**—A study of representative works of travel, biography, and fiction, illustrating the adaptation of method and style to the varying purposes of narrative literature. Open to first and second year students; to others by permission.

3 units, 2d semester (SEWARD)

8. **English Composition.**—Narration, description, and exposition. Open to second-year students who have passed in entrance subject 1, and to English major students in their first year.

2 units, both semesters

(SEWARD, HALL, PUTNAM, GRAY, COOPER)

9. **Exposition and Argument.**—Practice in the preparation and presentation of material in expository and argumentative

form, with some study of models. Open to a limited number of students who have passed in course 8.

3 units, 1st semester (ALDEN)

**10. Oral Debate.**—Practice in the preparation and delivery of oral arguments, chiefly on current public questions. The work of the debater is criticised by the instructors, with reference to the gathering and handling of material, to structure, and to style and delivery. Open to a limited number of students, and in general only to those taking, or having taken, course 9.

2 units, both semesters (ALDEN, DUNIWAY, BASSETT)

**11. Narration.**—The principles of invention and style in their practical application to narrative art. Open by recommendation from course 8.

1 unit, both semesters (SEWARD)

**12. Teachers' Course in English.**—Intended primarily for advanced students of English and for such others as satisfy the instructor of their fitness.

3 units, 1st semester (SEWARD)

**13. Prosody.**—A study of the principles and history of English versification. Open to English students in the third and fourth years.

2 units, 2d semester (ALDEN)

**14. Essayists of the Nineteenth Century.**—Lectures upon Carlyle, Ruskin, and Arnold, with assigned reading. A partial credit course, open to all students after their first year. English students desiring three units' credit for the work register for course 27 also and are assigned a topic for a thesis.

3 hrs., lectures (2 units credit), 1st semester (NEWCOMER)

**15. Outline History of English Literature.**—Lectures covering the entire field of English Literature, supplemented by systematic reading and reports; the aim of the course is to place the chief authors and periods in correct perspective. Open to second year students who have taken courses 5 and 6 or their equivalent. Prerequisite after 1908 to all the following courses in English Literature.

2 units, both semesters (GRAY)

**16. Early English Drama.**—English dramatic literature from its origin to the nineteenth century, omitting Shakspere. Open to students of all departments in the third and fourth years; to others by permission.

3 units, 2d semester (SEWARD)

**17. The English Novel.**—A rapid historical survey of the origin and development of the English Novel, and the critical

discussion of one novel each of Jane Austen, Scott, Dickens, Thackeray, George Eliot, and Hawthorne. Open to third and fourth year students. 2 units, both semesters (GRAY)

**18. English Literature from 1660 to 1798.**—The age of Dryden and the age of Pope (first semester); the age of Johnson and the early romantic revival (second semester). Open to students who have taken courses 5, 6, and 8 (preferably also 14), or their equivalent. [Not given in 1905-06.]

3 units, both semesters (ALDEN)

**19. Victorian Poets.**—*a.* Tennyson (first semester); *b.* Arnold, Rossetti, Morris, Swinburne (second semester). Lectures, discussions, and weekly papers. Open to English students in the third and fourth years; to others by permission. [Not given in 1905-06.]

3 units, both semesters (NEWCOMER, BASSETT)

**20. English Literature from 1798 to 1832.**—The age of Coleridge, Byron, Scott, and the Reviewers. Open to students of all departments in the third and fourth years.

2 units, 1st semester (ALDEN)

**21. American Literature.**—A survey of American literary history; lectures and reports. Students are expected to possess the works of the chief poets, especially Bryant, Poe, Longfellow, Whittier, Emerson, Lowell, Whitman, and Lanier. Open to those who have taken courses 5, 6, and 8, or their equivalent. [Not given in 1905-06.] 3 units, both semesters (NEWCOMER)

**22. Browning's "The Ring and the Book."**—Open to students of all departments in the third and fourth years.

3 units, 1st semester (ANDERSON)

**23. Milton: Paradise Lost.**—Open to students of English in the third and fourth years; to students of other departments in the fourth year; to others only by permission.

3 units, 1st semester (ANDERSON)

**24. Shakspeare: Introductory Course.**—Lectures. The student is expected to read a considerable number of the plays and poems. Open to students of English in the third and fourth years; to students of other departments in the fourth year; to others only by permission. [Not given in 1905-06.]

3 units, 1st semester (ANDERSON)

**25. Shakspeare: Advanced Course.**—Groups of plays are read in successive years, as indicated below. The student may elect

any one or more of these groups. The plays in each group are selected with a view to the illustration of the scope and variety of the author's powers and of the development of his art.

a. 1906: *Love's Labor Lost*, *As You Like It*, *Hamlet*, *Antony and Cleopatra*, *The Tempest*.

b. 1907: *Henry IV*, Parts I and II, *Henry V*, *The Merchant of Venice*, *Othello*, *The Winter's Tale*.

c. 1908: *The Comedy of Errors*, *The Merry Wives of Windsor*, *Much Ado About Nothing*, *Julius Cæsar*, *Macbeth*, *Cymbeline*.

d. 1909: *A Midsummer-Night's Dream*, *Romeo and Juliet*, *Twelfth Night*, *King Lear*, *Coriolanus*.

Open to those who have passed in course 24; to others only by permission. 3 units, 2d semester (ANDERSON)

**26. The History of English Literature from Spenser to Milton.**—Lectures. (A continuation of course 3, *English Philology*.) Open to students of English in the fourth year; to others only by permission. 2 units, both semesters (ANDERSON)

**27. Thesis.**—In connection with the more advanced courses in literature, the student may, by special permission of the instructor, undertake a piece of research, the results of which shall be embodied in a thesis.

1 unit, either semester (ANDERSON, NEWCOMER, ALDEN)

#### GRADUATE COURSES

The preliminary requirements for entrance upon a course for an advanced degree in English are:

a. The course for the degree of A. B. in English, or its equivalent.

b. An elementary knowledge of Anglo-Saxon.

c. A sound knowledge of two foreign languages (preferably one ancient and one modern language).

**28. The Development of English Prose**, from the middle of the sixteenth century to the end of the eighteenth. In 1905, fall semester, attention was concentrated upon the period from Lyly and Sidney to Milton.

2 to 3 units, 1st semester (NEWCOMER)

**29. Textual Criticism and Interpretation.**—A detailed and comprehensive study of Shakspeare's "*The Tempest*," "*The Winter's Tale*," and other works in his later manner. Furness's *Va-*

riorum editions of the two plays named were the required textbooks. 2 or 3 units, both semesters (ANDERSON)

**30. Literary Criticism.**—The history of English literary criticism, from the Elizabethan age to that of Matthew Arnold. [Not given in 1905-06.] 2 units, both semesters (ALDEN)

**31. Lyric and Epic.**—Studies in the lyric as a poetic form, and its development in England to the seventeenth century (first semester). Similar studies in epic poetry (second semester).

2 units, both semesters (ALDEN)

The work in courses 30 and 31 consists of lectures and semi-  
nary reports. These courses will ordinarily be given in alternate  
years.

## ENGLISH PHILOLOGY

EWALD FLÜGEL,\* Professor.

RAYMOND MACDONALD ALDEN, SAMUEL SWAYZE SEWARD, JR.,  
Assistant Professors (Department of English Literature).

EDWARD KIRBY PUTNAM, Instructor.

**1. Anglo-Saxon.**—*a.* Anglo-Saxon Grammar and translation of select passages in prose (first semester). *b.* Translation of select passages in verse; outline of Historical English Grammar (second semester).

3 units, both semesters (SEWARD, ALDEN)

**2. Chaucer.**—This course is an elementary one, and includes an outline of Middle English Grammar for the beginner.

2 units, 1st semester (ALDEN)

### GRADUATE COURSE

**11. Middle English.**—Reading of representative selections, with exercises.

2 or 3 units, both semesters (PUTNAM)

## BIBLICAL HISTORY AND LITERATURE

DAVID CHARLES GARDNER, CHARLES REYNOLDS BROWN,† GEORGE  
HODGES, Lecturers.

**1. Life and Teaching of Christ.**—The history of the life and times of Jesus, with a study of his words as recorded in the gospels and the application of his teaching to the life of to-day.

\*Absent on leave.

†Absent during 1905-06.

Lectures, discussions, and papers, with a study of the religious forces in modern society.

1 unit, both semesters (GARDNER)

**2. The Life and Literature of the Early Hebrews.**—A study of the historical, poetical, didactic, and prophetic books of the Old Testament according to modern literary methods. The methods of modern Biblical study, and the results of recent scholarship in determining the processes which entered into the composition of this literature. The bearing of these results on the moral and religious life of our own time. The lectures are supplemented by a certain amount of suggested reading and of investigation by each student.

1 unit, 2d semester (BROWN)

**3. Social Ethics.**—A study of moral values as expressed and developed in the various domestic, industrial, political, philanthropic, and other social relations of common life. The general method is inductive and practical, addressing itself mainly to the study of conduct in its results.

1 unit, 2d semester (BROWN)

**4. The Early Church.**—A study of the thought and life of primitive Christianity as recorded in the Acts and Epistles of the New Testament. The aim will be to discriminate the local from the universal, the temporary from the permanent elements, and to show the bearing of these truths upon the moral and religious problems of modern times.

1 unit, 2d semester (BROWN)

**5. The Acts of the Apostles.**—Studies in the origin and extension of the Christian Church until the close of St. Paul's ministry, with references to the Epistles. Two lectures a week, January-March, 1906.

1 unit, 2d semester (HODGES)

## PHILOSOPHY

WILLIAM JAMES, Acting Professor.

JEAN DU BUY, THERESA PEET RUSSELL, Assistants.

**1. A General Introduction to Philosophy.**—Lectures, with constant reference to Paulsen's Introduction to Philosophy as a text-book. The examination will cover both lectures and text-book.

3 units, 2d semester (JAMES)

## PSYCHOLOGY

FRANK ANGELL, Professor.

LILLIEN JANE MARTIN, Assistant Professor.

1. **General Psychology.**—Lectures and Exercises. Not open to first-year students. 3 units, both semesters (ANGELL)

2. **Experimental Psychology.**—Lectures, one hour; laboratory, two hours. Students are recommended to take this course in connection with course 1.

2 units, both semesters (ANGELL)

3. **Psychological Acoustics.**—Open to those who have completed course 1, or its equivalent.

2 units, 2d semester (ANGELL)

4. **Advanced Laboratory Work in Psychology.**

3 units, both semesters (ANGELL, MARTIN)

5. **Psychology of the Emotions**, with special reference to the Fine Arts. Open by permission to first-year students.

2 units, 1st semester (MARTIN)

6. **Psychology of the Social Relations.**—Open by permission to first-year students. 2 units, 2d semester (MARTIN)

7. **Current Psychological Literature.**—In this connection a sub-section for the purpose of reading German Psychology will be formed, if so desired.

1 unit, both semesters (ANGELL)

8. **Systematic Psychology.**—Open to those who have completed one year's work in Psychology.

2 units, 1st semester (MARTIN)

9. **Genetic Psychology.**—Open to those who have completed course 1, or its equivalent.

2 units, 2d semester (MARTIN)

10. **Research Work.**—Hours and conditions to be arranged. (ANGELL)

[Courses 5, 6, 8, 9 will not be given during 1906-07.]



## EDUCATION

ELLWOOD P. CUBBERLEY, Associate Professor.

DAVID SAMUEL SNEDDEN,\* HENRY SUZZALLO, Assistant Professors.

REBECCA BEATRICE FRENCH, Assistant.

The Department of Education has three main lines of work. The first is to offer such courses of a general nature on the history, function, and administration of public education as will be of value to the general university student, without reference to major subject or possible use in teaching. To this group of students, courses 1, 2, 3, 6, and 10 are recommended.

The second line of work is to assist other Departments of the University in the preparation of teachers for work in secondary schools. All such students should consult members of the Department as to courses. In general course 5 will be required as part of the prescribed units.

The third line of work comprehends the giving of such special preparation as is possible to those who desire to become teachers of Education or who wish to prepare for supervisory or administrative positions in the public schools.

In general, only graduates and teachers of experience who desire to prepare for administrative or supervisory work or for work in Education in Normal Schools, and whose preparation and experience are satisfactory to the Department, will be accepted as major students in Education.

The courses in Education are open to all students as electives or as minor subjects, but except in the above special cases the major subject should be chosen elsewhere.

**1. Public Education.**—A study of the province and problems of public education in the United States. An introductory course. Open to second year students.

2 units, 1st semester (CUBBERLEY)

**1b. Principles of Education.**—Under this title a temporary course was given during the 2d semester of 1905-06. This was made necessary by the absence of Professor SNEDDEN, but the course will not be repeated.

2 units, 2d semester (CUBBERLEY)

**2. History of Education in Europe.**—Lectures, following a syllabus, with assigned readings and reports. A study of the de-

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\*Absent on leave 1905-06.

velopment of educational ideals and systems from early times to the present, with particular reference to the forces which have operated in the evolution of the various historic ideals and types of schools. 3 units, both semesters (SUZZALLO)

**3. History of Education in America.**—Lectures, assigned readings, and reports. A study of the development of educational ideals, systems, and methods from the earliest colonial period to the present, with particular reference to the growth and extension of public education in the United States.

2 units, both semesters (SUZZALLO)

**4. Elementary Education.**—Lectures, reports, and discussions. A study of some of the more fundamental aspects of American elementary education, including a discussion of its aims, organization, curricula, and methods.

3 units, 1st semester (SNEDDEN, SUZZALLO)

**5. Secondary Education.**—Lectures, reports, and discussions. A study of the scope, organization, and method of public and private secondary schools in America, including a treatment of its preparatory, cultural, commercial, manual training, and industrial aspects. There will be included a discussion of the purposes, value, and limitations of the various subjects of the curriculum. 3 units, 2d semester (SNEDDEN, SUZZALLO)

**6. Education and Society.**—A study of educational institutions in their relations to social development. Special attention will be given to the effects of recent social changes upon educational aims and practice. The various attempts to make education more effective for social purposes will be investigated, and also the special problems connected with the education of negroes, foreigners, and socially defective classes. Open to third-year students. 2 units, both semesters (SNEDDEN)

**7. Courses of Study for Elementary Schools.**—The more fundamental principles of education are studied with reference to their application to the formation and administration of courses of study for elementary schools. Each member of the class will carry on a special study during the year in some one subject of the elementary curriculum. A Saturday morning class. [Alternates with course 8.] 2 units, both semesters (SNEDDEN)

**8. The Principles of General Method.**—An examination of the principles of general method and their application to

actual teaching. The work will involve a critical study of some of the recent contributions to educational literature, and the application of the principles of method to class-room work. A Saturday morning class, open only to teachers of experience. Alternates with course 7.

2 units, both semesters (SNEDDEN)

**9. City School Administration.**—A study of some of the problems involved in city school administration, as found in various typical city systems. Intended primarily for those preparing for administrative work.

2 units, both semesters (CUBBERLEY)

**10. State School Administration.**—A study of the educational principles underlying the administration of school systems in State and county, involving 'a comparative study of the best and the worst features of American State school systems. The object of the course is to show what ought to be, and why.

3 units, both semesters (CUBBERLEY)

**11. Thesis Work.**—In certain courses, students may be given an additional hour of credit on presentation of a satisfactory thesis on an assigned topic, and embodying the results of independent work. The consent of the instructor is necessary before registering.

1 unit, both semesters

**12. Special Courses.**—Special work in independent research will be provided for students prepared to do advanced work, the nature of the investigation being determined by the student's preparation and needs. Such work will include studies in administration, educational history, and the curriculum.

To be arranged (CUBBERLEY, SNEDDEN, SUZZALLO)

**13. Journal Club.**—Regular meetings of instructors and advanced students for the discussion of new books and current literature.

1 unit, both semesters (CUBBERLEY, SNEDDEN, SUZZALLO)

**13a. Current Educational Theories.**—Assigned readings and reports followed by discussion. A study of the current educational theories underlying modern educational thought and practice. Open by special permission of the instructor.

1 unit, 2d semester (SUZZALLO)

#### COURSES IN OTHER DEPARTMENTS

The following courses in other departments may be accepted as part of the work of the Department of Education, though

not more than four units of such courses will be accepted for the Teacher's Certificate, and then only when the student has made preparation to teach the subject either as a major or as a minor and is properly recommended in the subject.

**a. Teachers' Course in Greek.**—[See course 17 in the Department of Greek.] 2 units, 2d semester (MURRAY)

**b. Teachers' Course in Latin.**—[See course 17 in the Department of Latin.] 2 units, 2d semester (ELMORE)

**c. Teachers' Course in German.**—[See course 14 in the Department of Germanic Languages.]

2 units, 1st semester (Cooper)

**d. Teachers' Course in French.**—[See courses 20 and 21 in the Department of Romanic Languages.]

2 units, both semesters (MATZKE)

**e. Teachers' Course in English.**—[See course 12 in the Department of English.] 2 units, 1st semester (SEWARD)

**f. Teachers' Course in Drawing.**—[See course 10 in the Department of Drawing.] 2 units, 2d semester (CLARK)

**g. Teachers' Course in Elementary Physics.**—[See course 13 in the Department of Physics.]

1 unit, both semesters (SANFORD)

#### THE HIGH SCHOOL TEACHER'S CERTIFICATE

[For regulations governing recommendations for the High School Teacher's Certificate, see p. 73.]

### HISTORY

MAX FARRAND\*, ARLEY BARTHLOW SHOW, Professors.

CLYDE AUGUSTUS DUNIWAY, EPHRAIM DOUGLASS ADAMS, Associate Professors.

HENRY LEWIN CANNON, Assistant Professor.

PAYSON JACKSON TREAT, Instructor.

**1. Historical Training Course.**—A practical course in the finding and handling of historical material. Required of first-year history majors. 2 units, both semesters (CANNON,

with co-operation of other History instructors)

[History of Greece.—See Greek 10.]

\*Absent on leave, 1905-06.

[History of Rome.—See Latin 29.]

**3a. The Early Middle Ages, 476-1095.**—A general course, open to all students who have had one year in ancient history, or a satisfactory equivalent.

3 units, 1st semester (SHOW)

**3b. The Later Middle Ages, 1095-1492.**—A continuation of course 3a. Open to all students who have had course 3a, or a satisfactory equivalent. 3 units, 2d semester (SHOW)

**4a. English History to 1485.**—General outline course, open to first-year students. 3 units, 1st semester (CANNON)

**4b. English History since 1485.**—A continuation of course 4a. 3 units, 2d semester (CANNON)

With permission of their major departments, students may register for two units' credit in courses 4a and 5b and be excused from supplementary reading.

**5a. Modern European History, 1500-1715.**—A general outline course, open to students who have had courses 3a and 3b, or a satisfactory equivalent.

2 units, 1st semester (ADAMS)

**5b. Modern European History, 1715-1900.**—A continuation of course 5a. 2 units, 2d semester (ADAMS)

With permission of their major departments, students may register for one unit credit in courses 5a and 5b and be excused from supplementary reading.

**6. American Colonial and Revolutionary History to 1783.**—Open to students who have taken courses 4a and 4b, or a satisfactory equivalent. [Not given in 1905-06.]

3 units, both semesters (DUNIWAY)

**7. United States History, 1783-1844.**—Open to students who have taken courses 4a and 4b, or a satisfactory equivalent.

3 units, 1st semester (TREAT)

**8. Constitutional and Political History of the United States since 1844.**—A continuation of course 7.

3 units, 2d semester (DUNIWAY)

[Courses 7 and 8 will alternate with course 6. Together they will afford a survey of the field of American History.]

**9. The Westward Movement in United States History.**—The influence of the West upon the development of the United States. Not open to first-year students.

3 units, 2d semester (TREAT)

With permission of their major departments, students may register in course 9 for two units and be excused from supplementary reading.

**10. Pacific Slope History.**—Open to all but first-year students. [Not given in 1905-06.]

3 units, 1st semester (DUNIWAY)

**11. English Constitutional History.**—Open to students who have taken courses 4a and 4b.

2 units, both semesters (CANNON)

**12. Empire and Papacy in Middle Ages.**—Open to third-year students who have taken courses 3a and 3b. Subject in 1904-05, "The Age of the Hohenstaufen." [Not given in 1905-06.]

2 units, 1st semester (SHOW)

**13. History of France in the Middle Ages.**—Open to students who have taken courses 3a and 3b.

2 units, 1st semester (SHOW)

**14. Italian Renaissance.**—Open to third-year students who have taken courses 3a and 3b. Subject in 1905-06, "Italian Art and Humanism in the Fourteenth and Fifteenth Centuries."

1 unit, 2d semester (SHOW)

**15. Europe since 1789.**—A selected subject for some particular period is studied. The subject for 1905-06 was "English Parliamentary Opinion on the American Civil War." Open to third-year students who have taken courses 5a and 5b.

2 units, both semesters (ADAMS)

**18. Diplomatic History of the United States.**—Primarily for third and fourth-year students, who must have had at least two courses in modern history.

3 units, 1st semester (DUNIWAY)

**19. International Law.**—Primarily for third and fourth-year students, who must give evidence of a fair knowledge of modern history. It is mainly a study of the leading cases, with class discussion to develop (1) a statement of the general principles of international law, and (2) an outline of the history of the subject.

3 units, both semesters (DUNIWAY)

**20. Oral Debate.**—Open to a limited number of advanced students, and should be preceded by English 10. The course is intended to give training in the preparation of oral arguments

on public questions in the fields of history, politics, economics, and sociology, and to afford experience in public speaking, with the benefit of criticism by the instructors.

2 units, both semesters (DUNIWAY, ALDEN, BASSETT)

**21. Historical Composition.**—Every student taking history as a major subject, unless taking course 1, is required to register with some instructor in the department for regular training in the gathering, critical handling, and presentation of historical material. The exact method to be followed will be determined by the instructor according to the needs of the individual student.

1 unit, each semester

**22. Historical Bibliography and Criticism.**—Open to third and fourth-year students. [Not given in 1905-06.]

2 units, 1st semester (FARRAND)

#### ADVANCED COURSES

Intended primarily for graduate students, but open to advanced undergraduates, with permission of the instructors.

**27. Painting of the Italian Renaissance.**—A practical study of one or more great Renaissance artists. Subject for 1905-06, "Titian." Ability to read German and French is desirable.

1 unit, 1st semester (SHOW)

**28. Mediaeval Institutions.**—A practical study of select feudal documents. Ability to read Latin, German, and French is required.

1 unit, 2d semester (SHOW)

**30. Eighteenth Century English History.**—Subject in 1905-06, "The Internal Affairs of England Under William Pitt."

2 units, 2d semester (CANNON)

**31. English Diplomatic History.**—Subject in 1905-06, "The Attempt at European Coalition After the Peace of Campo Formio, 1797-1798." Reading ability in French required.

2 units, both semesters (ADAMS)

**32. Constitutional History of the United States.**—Subject for 1905-06, "Land System of the United States."

2 units, each semester (TREAT)

**33. The Westward Movement.**—Subject for 1904-05, "The American Occupation of California." [Not given in 1905-06.]

2 units, each semester (FARRAND)

**34. Later American History.**—Critical examination of selected topics. [Not given in 1905-06.]

2 units, 2d semester (DUNIWAY)

**35. English Colonization in Australia.**—The work in this course takes up some topic in connection with the early history of Australia, and is conducted on lines of individual study.

3 units, both semesters (ADAMS)

**37. Seminary in Later United States History.**—Subject for 1905-06, "Federal Relations of the Pacific States."

2 units, both semesters (DUNIWAY)

**38. Seminary in Pacific Slope History.**—Co-operative study of some selected topic. [Not given in 1905-06.]

2 units, 2d semester (DUNIWAY)

## ECONOMICS AND SOCIAL SCIENCE

SIMON JAMES McLEAN,\* ALLYN ABBOTT YOUNG,† Associate Professors.

HENRY ALVIN MILLIS, ALBERT CONSER WHITAKER, Assistant Professors.

Economics 1 must precede all other courses. Economics majors are also required to take course 2; along with this they may take either course 4 or course 11, followed by course 10a.

**1. Elements of Economics.**—An introduction to the subject, designed for the general student as well as for those specializing in the department. Open to first-year students. For Economics majors this is a three-hour course, consisting of two lecture hours and one hour of quiz. For those taking the course as an elective there will be two lecture hours.

2 or 3 units, both semesters (McLEAN, WHITAKER)

**2. Principles of Economics.**—An intensive study of the principles of Economics as developed in course 1. Required of Economics majors. 2 units, both semesters (MILLIS)

**3. Economic Theory.**—The theory of value and distribution. Preferably taken in senior year. [Given in 1905-06 and alternate years.] 2 units, both semesters (WHITAKER)

\* Resigned December, 1905.

† Beginning August, 1906.



**4. Money and Banking.**—Functions of money; token and paper money; money in international trade; bimetalism and the silver question. The mechanism of credit and theory of banking; American and foreign banking systems; the money market.

3 units, both semesters (WHITAKER)

**5. The American Transportation System.**—The evolution of the railway system; railway geography; railway consolidations; the economic effects of water transportation, etc. [Not given in 1905-06.]

3 units, 2d semester (McLEAN)

**5a. Railway Rates and Finance.**—Theory of rate-making; classification; factors affecting rate-making; the decline in rates; railway capitalization; operating ratios; cheapening of methods of financial control, etc.

3 units, 1st semester (McLEAN)

**6. Corporations and Trusts.**—Elementary survey of corporation law; history of corporations and corporate combinations, pools and trusts, in relation to public policy; present tendencies in legislative control.

2 units, both semesters (WHITAKER)

**7. Commerce of the Pacific.**—Studies in the trade, resources, and problems of commercial diplomacy in the Orient bordering the Pacific, including an examination of the Isthmian Canal project. [Given in 1906-07 and alternate years.]

2 units, 2d semester (WHITAKER)

**8. Public Finance.**—Public expenditures, revenues, debts, and financial administration. Special attention will be given to American practice in taxation.

3 units, both semesters (MILLIS)

**9. Local Finance.**—This is a continuation of course 8. The object will be to make a comparative study of local finance in America and in European countries, and to familiarize the student with American practice. [Not given in 1905-06.]

3 units, 2d semester (MILLIS)

**10. Industrial History of England.**—The several stages in the industrial evolution of England will be studied, particular attention being given to the Industrial Revolution, and to the modern capitalistic system.

3 units, 2d semester (MILLIS)

**10a. Industrial History of the United States.**—A review of the industrial evolution of the United States from colonial times. Special attention will be given to the developments of the last thirty years. [Not given in 1905-06.]

3 units, 1st semester (MILLIS)

**11. The Labor Problem.**—The course will cover the modern industrial system, wage system, collective bargaining, and other features of trade unionism, strikes, boycotts and lockouts, arbitration and conciliation, factory legislation, workingmen's insurance, profit-sharing, co-operation, and socialism.

3 units, 1st semester (MILLIS)

**12. Financial History of the United States.**—The federal finances, the tariff policy, and the monetary and banking history of the United States. Those who have not had Public Finance and six units' credit in American History will not be admitted without special consent. [Not given in 1905-06.]

3 units, 2d semester (MILLIS)

**13. Selected Economic Problems.**—Speculation, panics, and crises. Tariff and reciprocity. Immigration. [Given in 1906-07 and alternate years.] 2 units, 1st semester (WHITAKER)

**14. Communications.**—A comparative study of the policy and experience of the more important countries in regard to transportation by common roads and by water; the postal system; the telegraph system; the telephone system. [Not given in 1905-06.]

2 units, 2d semester (McLEAN)

**15. Thesis.**—In certain courses students are given an additional hour of credit on presentation of a satisfactory thesis embodying the results of independent work. Permission to register for thesis work must be obtained in each case from the major professor.

1 unit, either semester

**16. Railway Regulation in the United States.**—The development of a regulative policy to protect the public interests.

2 units, 1st semester (McLEAN)

**17. Railway Regulation in England.**—The development of a regulative policy to protect the public interests. [Not given in 1905-06.]

2 units, 2d semester (McLEAN)

## LAW

NATHAN ABBOTT, Professor.

CHARLES HENRY HUBERICH, Assistant Professor.

ARTHUR MARTIN CATHCART, ROY VALENTINE REPPY\*, LEON PAT-  
TESON LEWIS, WESLEY NEWCOMB HOFFFIELD, Instructors.

The Department of Law† offers the following courses:

(a) A course leading to the degree of Bachelor of Arts.

This is the regular undergraduate course for students who enter the University intending to make Law their major study. (For entrance requirements see pp. 37-62.) This course ordinarily occupies four years and requires that the student obtain 120 units of university credit. Of this time the equivalent of three years (90 units of credit) is given to general culture studies, and one year (30 units of credit) to the professional study of Law.

The selection of courses and the number of hours of study to be taken at any one time in this as in all the other courses in the Department is under the direction and subject to the approval of the Department Faculty.

The 120 unit-hours of work usually are apportioned as follows: To the first and second years, 30 units of general culture studies each; to the third year, 20 units of general culture studies and two courses in law; to the fourth year, 10 hours of general culture studies and three courses in law. The 90 unit-hours may be taken in three years, and the fourth year be entirely given to law study. No student in this course can begin the professional study of law until he has received credit for at least 50 unit-hours.

In arranging courses in general culture subjects it is expected that 60 units will be applied as follows: To Latin, 4; to either French, German, or Spanish, 6; to English, 10; to History, 15; to Economics, 13; to Mathematics, 6; and to one of the sciences, 6. English Composition (English 8) is required of all candidates for degrees.

(b) A course leading to the degree of Bachelor of Laws. This is a continuation of course (a) by the addition of two years' professional study of law. Special students who attain an average mark of seventy-five in fifteen subjects, including those of the first year's law course, will be given the degree of Bachelor of Laws. [This course will not be open to students entering after May, 1906.]

\*Resigned October, 1905.

†The Department of Law of Leland Stanford Junior University is a member of the Association of American Law Schools.

(c) A course leading to the degree of Juris Doctor (J. D.).

This course is open to students who have received the degree of Bachelor of Arts, or an equivalent degree from this University or from some other institution of recognized collegiate rank. This course is a continuation of course (a) by the completion of the full professional course of Law, which, in the case of those who have completed course (a), may be done in two years. Those who have a degree of Bachelor of Arts, from this or some other institution of recognized rank, but have no credit in Law, may complete the professional course in Law in three years.

(d) Special students and students having regular undergraduate standing, but who are not candidates for a degree and who are 21 years of age, may, by special permission, enter upon the professional study of law without satisfying the requirements as to culture courses. This course will afford preparation for the usual examination for admission to the bar, excepting as regard matters of local practice, but will not lead to any degree. The University, upon recommendation of the Department, will issue a Certificate to those students who complete the three years' course of professional study without fulfilling the requirements for any degree.

#### Work in Law Done Elsewhere

Except by the special permission of the Faculty of Law, credit received for work in Law done elsewhere will be accepted towards a degree only after satisfactory examination in all the subjects offered. But students with credit in Law received elsewhere may be admitted provisionally to such courses as their previous work justifies.

#### Examinations

Students are given credit only after passing written examinations at the end of each course. By special permission these examinations and examinations for advanced standing may be taken elsewhere. Application for such examinations should be made not later than April 1, for the spring examinations, and November 15, for the winter examinations. A fee of \$5 for these examinations is charged. Examinations to remove conditions are held only at the time of the next regular examination given in the subject for which the condition was incurred.

## Degrees

Undergraduates whose major subject is Law, on receiving credit for the first-year law courses, English 8, and satisfying all other University requirements, will be given the degree of Bachelor of Arts (A. B.).

Students who have received the degree of Bachelor of Arts, or its equivalent, from this or from some other institution of recognized collegiate rank, and who have received credit for fifteen courses in Law (exclusive of Elementary Law), chosen under advice of the Faculty of Law, will be given the degree of Juris Doctor (J. D.).

## Courses of Instruction

## PRELIMINARY COURSE

**1. Elementary Law.**—Lectures. No text-books. [Open to students of all departments who have twenty units of university credit. Omitted in 1905-06.] 2 units, both semesters

## FIRST-YEAR COURSES

**2. Contracts.**—Text-book: Williston's Cases on Contracts. 3 units, both semesters (CATHCART)

**3. Criminal Law and Procedure.**—Text-book: Beale's Cases on Criminal Law. 3 units, both semesters (Huberich)

**4. Torts.**—Text-book: Ames and Smith's Cases on Torts. 2 units, both semesters (CATHCART)

**5. Property I.**—Text-book: Gray's Cases on Property, Vols. I and II (2d ed.). 3 units, both semesters (ABBOTT)

**6. Equity I.**—Text-book: Ames's Cases on Equity Jurisdiction, Vol. I. 2 units, both semesters (HOHFELD)

## SECOND-YEAR COURSES

**7. Agency.**—Text-book: Wambaugh's Cases on Agency. [Omitted in 1905-06.] 2 units, both semesters (———)

**8. Bills and Notes.**—Text-book: Ames's Cases on Bills and Notes. 3 units, 1st semester; 2 units, 2d semester (LEWIS)

**9a. Damages.**—Text-book: Beale's Cases on Damages.

**9b. Public Service Companies.**—Text-book: Beale and Wyman's Cases. These two subjects taken together comprise one course and cannot be taken separately. [Omitted in 1905-06.] 2 units, both semesters (———)

**10. Equity II: Trusts.**—Text-book: Ames's Cases on Trusts (2d ed.). 2 units, both semesters (HOHFELD)

**11. Evidence.**—Text-book: Thayer's Cases on Evidence (2d ed.). This course, when possible, should be preceded by Pleading. 3 units, both semesters (HOHFELD)

**12. Persons.**—Text-book: Smith's Cases. [Omitted in 1905-06.] 2 units, both semesters (ABBOTT)

**13. Pleading.**—(a) Common Law Pleading. Text-book: Ames's Cases in Common Law Pleading. (b) Code Pleading. The course is based upon selected cases. 2 units, both semesters (CATHCART)

**14. Property II.**—Text-book: Gray's Cases on Property, Vols. III and IV. 3 units, both semesters (ABBOTT)

**15. Sales.**—Text-book: Williston's Cases on Sales. 3 units, 2d semester (LEWIS)

**16. Suretyship and Mortgages.**—Text-book: Ames's Cases on Suretyship and Wyman's Cases on Mortgages. [Omitted in 1905-06.] 3 units, both semesters (———)

#### THIRD-YEAR COURSES

**17. Conflict of Laws.**—Text-book: Beale's Cases on Conflict of Laws. 2 units, both semesters (HUBERICH)

**18. Constitutional Law.**—Text-book: Thayer's Cases on Constitutional Law. [Open also to well-prepared fourth-year students in History and Economics.] 3 units, both semesters (HUBERICH)

**19. Corporations.**—Text-book: Smith's Cases on Corporations. 2 units, both semesters (LEWIS)

**21. Partnership.**—Text-book: Mechem's Cases on Partnership. 2 units, 1st semester (LEWIS)

**22. Property III.**—Text-book: Gray's Cases on Property, Vols. V and VI. 2 units, both semesters (ABBOTT)

#### SPECIAL COURSES

**23. California Practice.**—Text-book: California Code of Civil Procedure. 1 unit, both semesters (———)

**24. International Law.**—Text-book: Snow's Cases on International Law. [See course 19 in History.] 2 units, both semesters (DUNIWAY)

## DRAWING

ARTHUR BRIDGMAN CLARK, Associate Professor.

GEORGE LOFTUS NOYES, Assistant Professor.

CHLOE LESLEY STARKS, Instructor.

The Department aims to meet the needs of three classes of students: Students who wish training in artistic perception and graphic expression, for its general culture value; students who wish to begin their professional art study while still receiving other University training; and technical students, to whom some drawing is essential.

The Teacher's Recommendation.

The minimum requirement for the high school teacher's recommendation in Drawing is courses 1, 2, 3, and 5 (at least five units), 6, and 10.

**1. Elementary Drawing.**—Introductory course. The habits of visual observation and graphic expression which underlie all representative art are given such exercise as is possible in the time. To this end, boxes, vases, and other simple forms are used as models. The emphasis is placed equally on accuracy of proportion, ensemble of light and shade, and a free, natural, direct technical method. While registration for two units is permitted, at least three units (nine actual working hours per week) is needed as preparation for other courses in the Department. Open to all students.

2 to 5 units, 1st semester (STARKS)

**2. Elementary Drawing of the Head.**—Drawing the head from the cast. Open to students with a satisfactory record in course 1. 3 to 5 units, either semester (NOYES)

**3. Advanced Drawing of the Head.**—A continuation of course 2 from life. Students will use pencil, charcoal, or oil paint as the instructor may advise. Open to second-year students.

3 to 5 units, either semester (NOYES)

**4. Color.**—Still-life painting in oil paints as an introduction to the subject. Students with sufficient skill in the use of oil may use water colors as a medium. Open to second-year students. 2 to 5 units, either semester (NOYES)

**5. Landscape.**—Chiefly outdoor work; but supplemented during the colder weather of each semester by study from draw-

ings and photographs, with special attention to decorative composition. The pen, water color, pencil, and charcoal are used according to the needs of each individual. Open to students who have made a satisfactory showing in course 1.

3 to 5 units, either semester. (CLARK)

**6. Lectures.**—Ideals and processes in pictorial and applied art. Open to all but first-year students.

2 units, 1st semester (CLARK)

**7. Journal Club.**—Discussion of modern and current art. Open to advanced students of the Department.

1 unit, 2d semester (CLARK)

**8. Scientific Perspective.**—This course deals with the mathematical principles of perspective in solving problems on the drafting-board, and with the application of the principles in drawings of actual buildings, landscape, and figures from nature. [Course 8 is given in alternate years; not given in 1905-06.]

2 units, 2d semester (CLARK)

**9. Scientific Drawing.**—A course designed to assist students in natural history laboratories. It will include the drawing of simple scientific subjects in pen outline, line and stipple shading, wash, and line and wash. Especial attention will be paid to needs of individual students. Open to students completing course 1.

2 units, both semesters (STARKS)

**10. Teachers' Course.**—For intending teachers of drawing. Open to advanced students only.

2 units, 2d semester (CLARK)

**11. Design.**—Principles of design as applied to book-cases, surface patterns, and the handicrafts generally.

2 units, both semesters (CLARK)

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## MATHEMATICS

ROBERT EDGAR ALLARDICE, RUFUS LOT GREEN, Professors.

GEORGE ABRAM MILLER, Associate Professor.

HANS FREDERIK Blichfeldt,\* Assistant Professor.

The courses in this department have been arranged to meet the wants of two classes of students—students whose major subject is Mathematics, and students who, while taking their major in

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\* Absent on leave, 1905-06.



some other department, desire to include some Mathematics in their course. Students in Engineering are provided for in the Department of Applied Mathematics.

For students whose major subject is Mathematics the following programme of work is recommended: In the first year, courses 2, 3, and 4; in the second year, courses 9 and 12; in the third year, courses 11, 13, and 14; while the work during the fourth year and for graduate students may be selected from the remaining courses, and from the Department of Applied Mathematics. The advanced courses will, for the most part, be given once in two or once in three years, and it is hoped that the advanced students will thus have the opportunity of studying the more important branches of modern mathematics.

Students whose major subject is Mathematics are recommended to begin the study of either French or of German in their freshman year.

Students who desire to take one or more years of Mathematics as a part of a liberal training are recommended to begin their work in this department with one or more of the courses 1, 2, 3.

#### The Teacher's Recommendation

For the high school teacher's recommendation in Mathematics the following courses are required: 1, 2, 3, 4, 9, and 10, and preferably also course 12.

**1. Trigonometry.**—Elementary course, with applications involving logarithmic calculation.

2 units, 1st semester (MILLER)

**2. Solid Geometry.**—Elementary course.

2 units, 2d semester (MILLER)

**3. Algebra.**—Fundamental laws, degree, symmetry, indeterminate coefficients, remainder theorems, factors, complex numbers, introduction to theory of equations, progressions, permutations, and combinations. Presupposes entrance credit in Elementary Algebra.

5 units, 1st semester (GREEN)

Students making Mathematics their major subject should take courses 3 and 4 as the first year's work, and those who have not had Trigonometry should also take course 1.

**4. Co-ordinate Geometry.**—An elementary course in the analytic geometry of the conic sections, including the discus-

sion of the general equation of the second degree. Presupposes course 3. 5 units, 2d semester (GREEN)

**5. Determinants.**—Elementary course. Presupposes course 3. [Not given in 1905-06.] 2 units, 1st semester (BLICHFELDT)

**6. Non-Euclidean Geometry.**—Presupposes a course in Calculus. [Not given in 1905-06.] 2 units, 2d semester (BLICHFELDT)

**9. Introduction to the Calculus.**—Limits, indeterminate forms, series, partial fractions, differentiation, simple methods of integration, with applications. Presupposes course 3. 2 units, both semesters (GREEN)

**10. Co-ordinate Geometry.**—An elementary course in the analytic geometry of the conic sections, including the discussion of the general equation of the second degree. Presupposes course 3. 3 units, both semesters (MILLER)

**11. Modern Analytic Geometry.**—Homogeneous co-ordinates, including line co-ordinates, projective properties of conics, systems of conics. Introduction to general theory of curves. Presupposes course 10. 2 units, both semesters (GREEN)

**12. Differential and Integral Calculus.**—Lectures on the Differential and Integral Calculus, with applications to the theory of plane curves, on the lines of Williamson's treatises. 3 units, both semesters (ALLARDICE)

Courses 9 and 12 form the regular work, during the second year, for students whose major subject is Mathematics.

**13. Advanced Calculus.**—A continuation of course 12. 2 units, 1st semester (ALLARDICE)

**14. Theory of Functions.**—Elementary course. 2 units, 2d semester (ALLARDICE)

**15. Differential Equations.** 3 units, both semesters (ALLARDICE)

**16. Definite Integrals.**—[Not given in 1905-06.] 2 units, 2d semester (ALLARDICE)

**17. Theory of Functions.**—Extended course. [Not given in 1905-06.] 3 units, both semesters (ALLARDICE)

**18. Theory of Equations.**—Including an introduction to the theory of binary algebraic forms. [Not given in 1905-06.] 3 units, both semesters (GREEN)

19. **History of Elementary Mathematics.**  
2 units, 1st semester (MILLER)
20. **General Astronomy.** 2 units, 2d semester (MILLER)
21. **Projective Geometry.**  
2 units, both semesters (ALLARDICE)
22. **Elementary Theory of Groups.**  
3 units, both semesters (MILLER)
23. **Theory of Numbers.**—[Not given in 1905-06.]  
2 units, 2d semester (MILLER)
24. **Seminary: Theory of Groups.**  
2 units, both semesters (MILLER)
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## APPLIED MATHEMATICS

LEANDER MILLER HOSKINS, Professor.

HALCOTT CADWALADER MORENO, Assistant Professor.

WILLIAM ALBERT MANNING, Instructor.

THOMAS GUTHRIE BROWN, RAYMOND AUGUST FULLER, CHARLES  
HUGH PAXTON, ARTHUR RANUM, HENRY WALTER STAGER,  
HALBERT RAY THOMAS, Assistants.

Under Applied Mathematics are included the courses in mathematics which are required of students in Engineering. The aim is to make these courses practical in the sense of furnishing thorough drill on fundamental principles and much practice in their application. Emphasis is laid upon accuracy and system in the solution of numerical problems.

Entrance credit in Elementary Algebra (subject 3a) and Plane Geometry (subject 4) is a prerequisite to all the following courses. Students who are not thoroughly trained in the preparatory work, or who lack aptitude for mathematical study, cannot pursue these courses successfully.

Courses 1, 2, 3, and 4 should be taken during the first year, and courses 5 and 6 during the second year. Students deficient in any of the first-year work cannot be admitted to second-year courses.

1. **Algebra.**—The course begins with a rapid review of elementary algebra, students showing deficient preparation not being permitted to continue. Entrance credit in Advanced Algebra (subject 3b, c) is not accepted as equivalent to this course

which is required of all who intend to take any following course in Applied Mathematics, except such as pass a special examination.† 5 units, 1st semester (MORENO, MANNING)

**2. Solid Geometry.**—This presupposes Plane Geometry, and is not required of those having entrance credit in Solid Geometry. 2 units, 1st semester (MORENO, MANNING)

**3. Trigonometry.**—Plane and Solid Geometry are prerequisites. Entrance credit in Trigonometry (subject 6) is not accepted as equivalent to this course, which is required of all intending to take any following work in Applied Mathematics, except those who pass a special examination.‡

3 units, either semester (MORENO)

**4. Co-ordinate Geometry.**—This course is open only to students who have credit in courses 1, 2, and 3 (or may be taken concurrently with 3).

5 units, 2d semester (MORENO, MANNING)

**5. Calculus.** 3 units, both semesters (HOSKINS)

**6. Theoretical Mechanics.**—An elementary course, covering the fundamental principles of Statics, Kinematics, and Kinetics, restricted mainly to coplanar forces and to plane motion of particles and of rigid bodies. An elementary treatment of Graphic Statics is included. The course is designed as a preparation for the courses in Applied Mechanics taken by students of Engineering, but is open to all whose preparation includes the equivalent of courses 1, 2, 3, and 4. Calculus must either precede this course or be taken at the same time.

5 units, both semesters (HOSKINS)

**7. Adjustment of Observations.**—Theory of the method of least squares, with applications. Credit in course 5 is a prerequisite.

2 units, 2d semester (MORENO)

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† This examination will be held at 9 a. m., August 29, 1906.

‡ This examination will be held at 2 p. m., August 29, 1906, and January 8, 1907.

## PHYSICS

FERNANDO SANFORD, Professor.

HERMAN DE CLERCQ STEARNS,\* Associate Professor.

FREDERICK JOHN ROGERS, ELMER REGINALD DREW, Assistant Professors.

JOSEPH GRANT BROWN, Instructor.

GRACE NIMS BROWN, GRACE HERMANITA BRUCKMAN, GEORGE ALBERT CLARK, WENDELL PRESCOTT ROOP, Assistants.

**1. Dynamics.**—Including hydrostatics and pneumatics. Open only to students who have had Algebra and Plane Geometry. This course or its equivalent is required as a preparation for each of the courses following (except 6 and 7). One lecture and two or three laboratory periods per week. All students are urged to register for four units if they can spare the time. Students who have not taken a preparatory course in Physics are expected to register for four units.

3 or 4 units, either semester (BROWN)

**2. Electricity and Magnetism.**—One lecture and two or three laboratory periods per week. Open only to students who have had course 1, or its equivalent.

3 or 4 units, either semester (DREW)

**3. Heat.**—One lecture and two laboratory periods per week. Open to students who have had course 1.

3 units, either semester (SANFORD)

**4. Sound.**—Including wave-motion. Open to students who have had course 1. Two laboratory periods per week.

2 units, 1st semester (BROWN)

**5. Elementary Optics.**—Open only to students who have had Trigonometry. Two laboratory periods per week.

2 units, either semester (SANFORD)

Courses 1, 2, 3, 4, and 5 constitute a course in general Physics, and are intended to precede the advanced courses.

**6. Heat and Light.**—Two lectures and two laboratory periods per week. This is a special course designed for first-year engineers. Open to engineering students who have entrance credit in Physics. 4 units, 1st semester (SANFORD, STEARNS)

\*Absent on leave, 1905-06.

**7. Electricity and Magnetism.**—An introductory course, open only to students of Engineering who have received entrance credit in Physics. Two lectures and two laboratory periods per week.  
4 units, 1st semester (ROGERS)

**8. Experimental Optics.**—Two laboratory periods per week. Course 8 is required of Physics majors.  
2 units, both semesters (SANFORD)

**9. Electrical Measurements.**—Open to students who have taken course 2 or course 7.  
3 units, either or both semesters (ROGERS)

**10. Investigation of Original Problems in the Laboratory.**  
To be determined in each case (SANFORD)

**11.—General Physics.**—Lectures. Open to students who have had courses 1, 2, 3, 4, and 5, or their equivalent.  
4 units, both semesters (SANFORD)

**12. Electrical Theory.**—Open to students who have taken course 2 or course 7, and Calculus.  
3 units, 1st semester (DREW)

**13. Teachers' Course in Elementary Physics.**—Open to students who have had courses 1, 2, 3, 4, and 5, or their equivalent.  
1 unit, both semesters (SANFORD)

**14. General Thermodynamics.**—Open to students who have had Calculus and course 3, or its equivalent. [Not given in 1905-06.]  
3 units, 1st semester (STEARNS)

**15. Vibratory Motion.**—A theoretical course, consisting of recitations and lectures illustrated by occasional lecture experiments and a few carefully executed laboratory experiments. A knowledge of Differential and Integral Calculus is required.  
3 units, 1st semester (ROGERS)

**16. The Kinetic Theory of Gases.**—Open to students who have had Calculus and course 3, or its equivalent.  
2 units, 2d semester (ROGERS)

**17. History of Physics.**—Lectures and readings on the history of physical science with special reference to the development of theories. The first five courses in Physics are required before entering this course.  
2 units, 2d semester (ROGERS)

Course 6 in Applied Mathematics is also recommended for major students in Physics.

#### The Teacher's Recommendation

The minimum requirement for the high school teacher's recommendation in Physics is courses 1, 2, 3, 4, 5, or an equivalent, and course 13.

#### Laboratory Fees

Courses 1 and 2, three or four dollars (four dollars for four units); courses 3, 6, and 7, three dollars per semester; courses 4, 5, and 8, two dollars per semester. In courses 9 and 10 the fee will depend upon the number of units credit and the apparatus used, but will not exceed five dollars per semester.

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## CHEMISTRY

JOHN MAXSON STILLMAN, LIONEL REMOND LENOX, Professors.

STEWART WOODFORD YOUNG, EDWARD CURTIS FRANKLIN, Associate Professors.

ROBERT ECKELS SWAIN, Assistant Professor.

ALVIN JOSEPH COX, Instructor.

JOHN PEARCE MITCHELL, Acting Instructor.

WILLIAM ELMER CRAWFORD, WILLIAM EDMUND BURKE, FRED FINLEY FITZGERALD, PAUL W. AVERY, GEORGE DE FOREST BARNETT, WILLIAM GEORGE BATEMAN, JACOB MEDAY PRICE, DANE MANSON GREER, Assistants.

### I. LECTURE COURSES

**1. General Inorganic Chemistry.**—Comprising a systematic treatment of elementary principles and the properties of the more important elements and their compounds. In connection with laboratory course *a*, and open in connection with that course, to all students in the University.

2 units, both semesters (SWAIN)

**2. Principles of General and Inorganic Chemistry.**—Discussion of the elements of chemical theories and of important generalizations in the field of inorganic chemistry. Open to all students who have completed courses 1 and *a*.

3 units, both semesters (STILLMAN)

**3. Organic Chemistry.**—Lectures and reviews on the chemistry of Carbon Compounds. Open to students who have completed courses 1 and *a*.

2 units, both semesters (FRANKLIN)

**4. Industrial Chemistry.**—Lectures on fuels, water, acid and alkali manufacturing, explosives, sugar-making and refining, petroleum. Lectures in this course are also given by Professor LENOX (Iron and Steel) and by Professor FRANKLIN (Dyes). Open to students who have completed courses 2 and 3; or may be taken concurrently with course 3.

2 units, both semesters (STILLMAN)

**5. History of Chemistry.**—Open to students who have completed courses 2 and 3. [Given in 1905-06.]

2 units, 1st semester, in alternate years (STILLMAN)

**6. Qualitative Analysis.**—In connection with laboratory course *b*.

1 unit, either semester (LENOX)

**7. Advanced Organic Chemistry.**—Advanced topics in Organic Chemistry, including Stereo-Chemistry. Open to students who have completed course 3. [To be given in 1906-07.]

2 units, 1st semester, in alternate years (FRANKLIN)

**8. General Physical Chemistry.**—Lectures covering as far as possible the whole field of physical chemistry. Open to students who have completed courses 2 and *d* in Chemistry, courses 4 and 9 in Mathematics, and course 1 in Physics (course 2 being also recommended).

3 units, both semesters (YOUNG)

**9. Physical-Chemical Measurements.**—An informal course of lectures given as needed in connection with course *f*.

(No credit) (YOUNG)

**10. Theories of Analytical Chemistry.**

1 unit, 2d semester (YOUNG)

**11. Physiological Chemistry.**—A brief survey of the field of Physiological Chemistry. Open to students who have completed courses 3 and *d*, and Physiology 1.

2 units, both semesters (SWAIN)

**12. Seminary in Chemistry.**—Discussion of assigned topics in theoretical and general chemistry. Open to graduate students, and to advanced undergraduates in Chemistry, with the approval of the Faculty in Chemistry.

1 unit, both semesters



## II. LABORATORY COURSES

**a. General Inorganic Chemistry.**—First semester: Illustrating fundamental laws and principles of elementary chemistry. Second semester: Inorganic preparations and general chemistry. Students with entrance credit in chemistry may be excused from the first semester's laboratory work. In connection with course 1. 2 afternoons, both semesters

(SWAIN, MITCHELL, BARNETT, BATEMAN, PRICE, GREER)

**b. Qualitative Analysis.**—Open to students who have completed courses 1 and a.

3 afternoons, either semester (LENOX, FITZGERALD)

**c. Preparation of Typical Carbon Compounds.**—Open in connection with course 3 to students who have completed course b.

Either one or two semesters, one semester required for graduation of Chemistry majors.

3 afternoons, either or both semesters (FRANKLIN)

**d. Quantitative Analysis.**—Training in manipulation in gravimetric and volumetric methods. Work begins either semester. Students in other departments than Chemistry may register for three afternoons if they cannot arrange for four, as is recommended. Open to students who have completed courses 6 and b.

4 afternoons, either semester (STILLMAN, COX)

**e. Mineral Analysis.**—Systematic analysis of representative minerals. Open to students who have completed course d, and required of students whose major subject is Chemistry, unless f or h be elected instead.

4 afternoons, either semester (STILLMAN, LENOX, COX)

**f. Physical-Chemical Measurements.**—Exercises in the practice of physical-chemical laboratory methods. Open to students who have completed or are taking course 8, and who have completed course d. 3 or 5 units, either semester (YOUNG)

**g. Physical-Chemical Research.**—Special problems for original investigations in the field of Physical Chemistry. Open to students who have completed course f.

To be arranged (YOUNG)

**h. Physiological Chemistry.**—A laboratory course embracing a study of the various tissues and fluids of the body and of the chemistry of digestion and excretion. Requirements as under lecture course 11. 3 units, both semesters (SWAIN)

**i. Urine Analysis.**—Open to students who have completed course *d*. 3 afternoons, 2d semester (SWAIN)

**j. Special Methods in Mineral Analysis.**—Chiefly volumetric, including iron and steel analysis. Open to students who have completed course *d*. 4 afternoons, 2d semester. (LENOX)

**k. Organic Chemistry Research.**

To be arranged (FRANKLIN)

**l. Sugar Analysis.**—Methods of analysis used in sugar manufacture and refining. Open to students who have completed courses *d* and *c*.

3 or 4 afternoons, 1st semester (STILLMAN)

**m. Organic Analysis.**—Open to students who have completed courses *d* and *e*. 2 afternoons, either semester (FRANKLIN)

**n. Assaying.**—Open to students who have completed course *d*. 3 afternoons, either semester (LENOX, AVERY)

**o. Sanitary Water Analysis.**—Open to students who have completed course *d*. 3 afternoons, 2d semester (STILLMAN)

Candidates for the degree of Bachelor of Arts in Chemistry may select any one of the four following courses (A, B, C, D), the requirements of the Department being as follows:

**A. GENERAL CHEMISTRY**

**FIRST YEAR:**—Chemistry 1, *a*; Physics 1; Mathematics 4; German 1.

**SECOND YEAR:**—Chemistry 2, 6, *b*; Mathematics, 9; German 2*a*.

**THIRD and FOURTH YEARS:**—Chemistry *d*, 3, *c*, 8, *f*.

Course A is recommended for all who are studying the Science of Chemistry for its own sake or for the profession of teaching.

**B. ANALYTICAL CHEMISTRY**

**FIRST YEAR:**—Chemistry 1, *a*; Physics 1; German 1.

**SECOND YEAR:**—Chemistry 2, 6, *b*; Geology 1, 2; German 2*a*.

**THIRD and FOURTH YEARS:**—Chemistry *d*, *e*, *c*, *n*, 3, 10; Geology 5.

Course B is particularly adapted to students who are looking forward to the career of analytical chemist and assayer.

**C. MEDICAL OR SANITARY CHEMISTRY**

**FIRST YEAR:**—Chemistry 1, *a*; Physiology 1; German 1.

**SECOND YEAR:**—Chemistry 2, 6, *b*; Physics, 1; German 2*a*.

THIRD and FOURTH YEARS:—Chemistry 3, *c*, *d*, 11, *h*.

Course C is especially designed for students looking forward to medical education.

#### D. CHEMICAL ENGINEERING

This course comprises four years of the necessary five years' work leading to the advanced degree of Engineer in Chemical Engineering. Candidates in this course receive the degree of A. B. in Chemistry upon completion of the following requirements:

FIRST YEAR:—Chemistry 1, *a*; Applied Mathematics 1, 2, 3, 4; German 1.

SECOND YEAR:—Chemistry 2, 6, *b*, *d*; Applied Mathematics 5, 6.

THIRD YEAR:—Chemistry 3, *c*; Engineering 1*a*, 1*b*, 2; Physics 1, 2 (or 6, 7); German 2*a*.

FOURTH YEAR:—Chemistry 4, *e* (or *n*); Mechanical Engineering 2, 3*a*, 3*c*; Geology 11*c*; Engineering 3*a*.

Course D is intended particularly for students who are working toward the degree of Chemical Engineer and who desire to fit themselves for positions of responsibility in connection with the administration of industries involving chemical knowledge and skill.

#### ADVANCED DEGREES

Applicants for the degree of *Master of Arts* in Chemistry will be expected to complete, in addition to the requirements for the bachelor's degree, the equivalent of thirty units' work in the University—of which approximately two-thirds must be in the department. This work will include a thesis based on laboratory work, and chemistry 8 and *f*, if not included in the undergraduate work.

Candidates for the advanced degree of *Engineer* in Chemical Engineering will be required to complete, in addition to the requirements for the A. B. degree specified under course D: Mechanical Engineering 4, 6 (first semester of the course), 9, 8 (2 afternoons per week for one semester), Chemistry 8, and a thesis based on laboratory work. Electrical Engineering 1 is advised if possible, though not required. It is estimated that these requirements may be completed in one year after the completion of the requirements under Course D.

Candidates for the degree of *Doctor of Philosophy* in Chemistry, after the completion of the equivalent of the requirements for

Master of Arts or Engineer, will follow such courses as are approved by the department faculty, subject to general University regulations.

#### The Teacher's Recommendation

The minimum requirement for the high school teacher's recommendation in Chemistry is courses 1 and *a* (Elementary and General Inorganic, lectures and laboratory), the first half of course 2 (Principles of Chemistry), and either the second half of course 2, or courses 6 and *b* (Qualitative Analysis, lectures and laboratory).

#### Laboratory Fees

A charge of twenty-five dollars per semester will be made to students in each laboratory course of not more than four hours' registration. Of this charge five dollars per semester in assaying, and ten dollars per semester in the other courses, is returnable, less bills for breakage and loss of apparatus.

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### BOTANY

DOUGLAS HOUGHTON CAMPBELL,\* Professor.

GEORGE JAMES PEIRCE, Associate Professor.

ANSTRUTHER ABERCROMBIE LAWSON, Instructor.

**1. Elementary Botany.**—Study of representatives of the principal groups of plants with lectures upon special morphology and classification. (Campbell's University Text-book of Botany.) The aim of this course is to give the student a grounding in the principles of plant structure and classification, derived from a careful study in the laboratory of selected types, supplemented by such explanatory lectures as may be deemed necessary.

3 units, both semesters (PEIRCE, LAWSON)

**2. Algæ.**—Lectures, reading, and laboratory work upon the special morphology and classification of the Algæ. [Omitted in 1905-06.]

5 units, 1st semester (CAMPBELL)

**3. Archegoniataæ.**—Special morphology and classification of the Archegoniataæ. Continuation of course 2. [Omitted in 1905-06.]

5 units, 2d semester (CAMPBELL)

**4. Physiology.**—Laboratory work, lectures, and reading on Respiration and Nutrition. [At least an elementary knowledge of Physics and Chemistry is a desirable preliminary to this course.]

3 units, 1st semester (PEIRCE)

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\*Absent on leave, 1905-06.

**5. Elementary Bacteriology.**—Laboratory work, lectures, and reading. [Omitted in 1905-06.]

3 units, 1st semester (PEIRCE)

**6. The General Physiology of Plants.**—Lectures. Open to all members of the University. 1 unit, 1st semester (PEIRCE)

**7. The Evolution of Plant Forms.**—Lectures. Open to all except first-year students. [Omitted in 1905-06.]

1 unit, 2d semester (CAMPBELL)

**8. Physiology.**—Laboratory work, lectures, and reading on Growth, Irritability, and Reproduction. [At least an elementary knowledge of Physics and Chemistry is a desirable preliminary to this course.]

3 units, 2d semester (PEIRCE)

**9. Histology.**—Lectures and laboratory work on the structure and development of the sporophyte tissues. Microtechnique.

3 units, 1st semester (LAWSON)

**10. Cytology.**—Lectures and laboratory work on the cell and cell organs. [Alternating with Course 11; not given in 1905-06.]

3 units, 2d semester (LAWSON)

**11. Special Morphology of the Gymnosperms.**—Given in 1905-06, and in alternate years following.

3 units, 2d semester (LAWSON)

**12. Advanced Work in Morphology and Physiology.**—Intended especially for graduate students. (CAMPBELL, PEIRCE)

Course 1 must precede all other courses, except courses 6 and 7. Students making the subject a major must complete thirty-five units, including courses 1 to 4, course 2 or course 3 in Systematic Botany, and also course 1 in Zoology, before graduation. Course 12 is intended especially for graduate students, and opportunities will be given such students for carrying on special lines of work upon original problems.

#### The Teacher's Recommendation

The minimum requirement for the high school teacher's recommendation, with Botany as a minor subject, is course 1 and two additional courses.

#### Laboratory Fees

Two dollars and a half for course 1; ten dollars for course 5; five dollars for courses 4 and 8; three dollars per semester for each of the other laboratory courses.

## SYSTEMATIC BOTANY

WILLIAM RUSSELL DUDLEY, Professor.

HARRY BAKER HUMPHREY, Acting Instructor

Instruction in this Department chiefly relates to the Spermaphytes, their structure, affinities, and geographic distribution. The advanced work on the Fungi will also be given under its direction. Course 1, or its equivalent, and the Algæ and Archegoniata in General Botany, course 1 in Zoology, and course 1 in Entomology are required of students intending to graduate with Systematic Botany as a major study. Course 1, or its equivalent, is also required as a basis for courses 2, 4, and 6. An elementary knowledge of the structure of the flowering plants only is required to enter courses 3 and 5. Students are strongly advised to take Physiological Anatomy and one course in Physiology by Professor PEIRCE.

[1. **Elementary Botany.**—A study of plant types, etc. This is course 1 under. General Botany.]

2. **Fungi.**—The laboratory work (three hours) will be devoted to morphology, development, and culture methods; the lectures to systematic relationships, with an account of economically important forms. 5 units, 1st semester (DUDLEY, HUMPHREY)

3. **Spermaphyta.**—The morphology, histology, and affinities of the principal orders of flowering plants represented on the Pacific Slope will be studied, and an acquaintance made with typical forms through dissection and drawing.

4 units, 2d semester (DUDLEY, HUMPHREY)

[4. **The Algæ and Archegoniata.**—Courses 2 and 3 under General Botany.]

5. **Geographical Distribution and Forest Botany.**—Lectures on the orders containing trees and shrubs and on the general principles of geographical distribution which they illustrate. Laboratory work, also preparation of herbarium specimens of woody plants, native and exotic.

3 units, 2d semester (DUDLEY, HUMPHREY)

6. **The Compositæ.**—A study of representatives of the tribes of Compositæ, with reference to the general principles of classification. 2 or more units, 1st semester (DUDLEY, HUMPHREY)

**7. Advanced Work.**—Advanced or special study, chiefly for seniors in the Department. It is planned to meet the needs of each individual, and to promote habits of independent work.

3 or more units, each semester (DUDLEY)

**8. Graduate Work.**—This includes investigation on a special subject in the Spermaphyta or Fungi, which may be either a systematic or a biological study. It is supplemented by reading, and a study of methods in bibliography. (DUDLEY)

Several carefully planned excursions in the second semester, through the plant formations in the adjacent mountains, are made the subjects of written reports by the students in course 5. Similar excursions are required in Course 2.

The Herbarium consists largely of plants collected in Western America, and includes, besides purchases, considerable donations from the National Herbarium, the California Academy of Sciences, J. W. Congdon of Mariposa, and others. Gifts of herbarium specimens of trees and shrubs are especially desired, and will be named for collectors. The considerable private collections of flowering plants and fungi belonging to the head of the Department are in constant use.

#### Laboratory Fees

Laboratory fees for courses 5 and 6, two dollars; for the other courses, three dollars.

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## PHYSIOLOGY AND HISTOLOGY

OLIVER PEEBLES JENKINS, Professor.

FRANK MACE MCFARLAND, Associate Professor.

JAMES ROLLIN SLONAKER, CLARA S. STOLTENBERG, Assistant Professors.

JOHN FRANCIS COWAN, Acting Instructor.

MICHITARO SINDO, Assistant.

#### UNDERGRADUATE COURSES

**1. General Anatomy and Physiology.**—This course is designed to give a general view of the laws of the structure and the activity of organisms. The work will give occasion to discuss many questions of General Biology. It consists of: First, the study of the cell and its activities as shown in the unicellular organisms, in reproductive cells, and in individual cells of many tis-

sues; second, the study of the laws and course of development resulting in higher differentiations in structure, and specializations in function, exhibited in a selected series of organisms, both animals and plants, of increasing complexity; third, the comparative study of the physiological processes of forms placed under widely different conditions. The latter part of the course is occupied with an introduction to the embryology, anatomy, and physiology of vertebrates. (One lecture and five laboratory hours a week.)

3 units, both semesters

(JENKINS, SLONAKER, STOLTENBERG, COWAN)

**2. Physiology of Muscle, Blood, and Circulation.**—To be preceded by course 1. An experimental course covering the ground represented in Foster's Physiology, Part I, or the American Text-Book on the same subjects. (One lecture and five laboratory hours per week.)

3 units, 1st semester (SLONAKER, COWAN)

**3. Physiology of Digestion, Respiration, Elimination of Wastes, Metabolism, and Nutrition.**—Planned to follow course 2. An experimental course, with Foster's Physiology, Part II, and the American Text-book, as texts. (One lecture and five laboratory hours per week.)

3 units, 2d semester (SLONAKER, COWAN)

**4. Structure of the Nervous System.**—The course consists of the dissection and comparative study of a series of vertebrate brains, including the human brain and cord, also the peripheral nervous system; abundant material is provided, also such necessary helps as the latest models and charts. For texts the student will use Quain, Edinger, and Barker. (One lecture and five laboratory hours per week.)

3 units, 1st semester (STOLTENBERG)

**4b. Structure of the Nervous System.**—Advanced course. Open to those who have taken courses 4 and 5.

2 units, 2d semester (STOLTENBERG)

**5. Histology of the Nervous System and Sense Organs.**—The course includes also the anatomy of the sense organs. It is planned to accompany course 4, the two being designed to give the gross and minute anatomy of the central and peripheral nervous systems and sense organs. The texts necessary for the



student's use are Quain and Barker. (One lecture and five laboratory hours per week.)

3 units, 1st semester (STOLTENBERG)

**6. Physiology of the Nervous System and Sense Organs.**—An experimental course in these subjects, designed to follow courses 4 and 5. Texts: Foster, American Text-book. (One lecture and five laboratory hours per week.)

3 units, 2d semester (JENKINS)

**7. The Vertebrate Eye.**—A comparative study of the structure and physiology of the eyes of vertebrates, giving special attention to the retina. Open to advanced students. (Lecture and laboratory work, six hours per week.)

2 units, 2d semester (SLONAKER)

**8. Special Courses in Physiology.**—Advanced courses open only to those who have had courses 1, 2, 3, 4, 5, and 6. They are arranged for the advanced study of selected subjects in physiology, or as a drill in the methods of research. The work will be planned for the individual student, the time varying with the exigencies of the case.

2 to 5 units, both semesters (JENKINS)

**9. Histology.**—This course includes both the study of the tissues in a comparative way, and the history of their development; also the minute anatomy of organs, except those of the nervous system and senses. [See courses 4 and 5.] It also gives a drill in histological technique. Open to those who have taken course 1, or its equivalent. Students with physiology as their major are advised to take courses 2, 3, and 9 together. (One lecture and six laboratory hours a week.)

3 units, both semesters (McFARLAND)

**10. Histogenesis.**—A course in advanced Histology for students who have completed courses 1 and 9, and in addition the first semester of Vertebrate Embryology (Zoology 7). It comprises the comparative study of the histogenesis of the fundamental vertebrate tissues and organs. (One lecture per week, minimum laboratory work six hours per week.)

3 units, 1st semester (McFARLAND)

**11. Neurocytology.**—A comparative study of the minute structure of the nerve cell and nerve fibre, the neurone theory and the question of functional alterations of structure dur-

ing normal activity and artificial stimulation. (One lecture and at least six laboratory hours per week.) Open to advanced students. [Not to be given in 1906-07.]

3 to 5 units, 2d semester, in alternate years (McFARLAND)

**12. Cellular Biology.**—A course in Cytology dealing with the structure and functions of the cell, with special reference to the reproductive processes in unicellular and multicellular organisms, and the theories connected therewith. Open to advanced students. (Two lectures per week, with demonstrations and laboratory work.) [Not given in 1905-06.]

3 to 5 units, 2d semester, in alternate years (McFARLAND)

**13. Anatomy.**—This course consists of twelve weeks' study of human osteology, with a brief comparative study of skeletons of vertebrates. The remaining six weeks is given to mammalian myology, angiology, and splanchnology (dog, cat, rabbit). [For anatomy of nervous system and sense organs, see courses 4 and 5.]

3 to 5 units, 2d semester (COWAN)

**14. Special Courses in Histology.**—Advanced courses in Histology will be arranged for individual students, with a view to giving drill in methods of research. Open only to those who have had courses 1, 5, and 9.

2 to 5 units, both semesters (McFARLAND)

**15. Journal Club.**—Students in the advanced classes will be expected to meet once a week to discuss current literature in Physiology and Histology.

1 unit, both semesters

**16. Seminary in Physiology and Histology.**—Open to graduate students.

2 units, both semesters

**17. Research in Physiology or Histology.**

To be determined, both semesters

(JENKINS, McFARLAND, SLONAKER, STOLTENBERG)

Candidates for the Bachelor's degree who select Physiology and Histology as a major will be expected to take courses 1, 2, 3, 4, 5, 6, 9, and 15, and at least five units to be made up from the other courses offered; and in addition courses 1 and 2 in Chemistry, 1 and 2 in Physics, and the first semester in Embryology (course 7 in Zoology).

*Laboratory unit of credit.*—In those courses in which definite laboratory time is not fixed, three hours of laboratory work per

week through one semester are taken as the equivalent of one unit of credit.

#### The Teacher's Recommendation

Students who wish the Department recommendation for High School teaching in Physiology are expected to complete the first two years' work (courses 1, 2, 3, and 9).

#### Laboratory Fees

Seven dollars per semester, except for course 1, in which the fee is five dollars per semester.

#### GRADUATE COURSES

The graduate work of the Department is included in the courses numbered 4b, 7, 8, 10, 11, 12, 14, 15, 16, and 17. Undergraduate students may elect such of these courses as they are prepared to take, but credit recorded in undergraduate standing will not count toward a higher degree. The details of the work of a graduate student will be planned for each individual, and will naturally depend on the aim sought by him and upon his previous training. Candidates for the higher degrees will be expected to include in their work attendance on the Journal Club and Seminary, the selection of certain of the courses given above, and the accomplishment of some research. When it is desired to select a minor subject, the choice of such minor will be guided by the needs of the candidate. The work leading to these degrees is of such a nature as to require a reading knowledge of German and French for its accomplishment.

#### PREPARATION FOR THE STUDY OF MEDICINE

Students intending to enter on the study of Medicine are advised to take Physiology and Histology as a major subject, with Chemistry, Physics, Comparative Anatomy of the Vertebrates, and Hygiene among the collateral subjects. Such a course gives that foundation both in scientific knowledge and in skill in experimental Physiology, and in Histological and Anatomical technique, which will make it possible to accomplish the medical course of the best medical schools with greater advantage.

## HYGIENE

WILLIAM FREEMAN SNOW, Associate Professor.

THOMAS ANDREW STOREY,\* Assistant Professor.

HALBERT WILLIAM CHAPPEL, Instructor.

FLORENCE BOLTON, VERA TOWNSEND, Assistants.

EARL HAMPTON COLEMAN, MARY ROSALIE STOLZ, HAROLD WILLIAM STRONG, Gymnasium Assistants.

## LECTURES

**1. Elementary Hygiene.**—Lectures upon the care of the body and conditions conducive to student health. One lecture each week through the year in connection with Gymnasium course *a* and course *e*. 1 unit, both semesters (STOREY)

**2. General Hygiene.**—Lectures on sanitary science and public health. Open to all students who have had course 1 in Physiology or its equivalent. 2 units, 1st semester (SNOW)

**3. History of Medicine.**—Lectures on the more important men and events influencing the development of preventive medicine and sanitary science. Not open to first-year students. [Given in 1905-06.] 2 units, 1st semester, in alternate years (SNOW)

**4. Sanitary Legislation.**—Lectures on special legislation in the United States on subjects of Public and Industrial Hygiene and Quarantine law. Not open to first-year students. [Given in 1905-06.] 2 units, 2d semester, in alternate years (SNOW)

## LABORATORY COURSES

**5a. Topographical Anatomy.**—Open by special arrangement to students who have completed courses 1, 2, 3, 4, 9, and 13 in Physiology. 1 to 3 units, either semester (STOREY)

**5b. Physical Examination.**—Open by special arrangement to students who have completed course 5a in Hygiene and courses 5 and 6 in Physiology. 1 to 3 units, either semester (STOREY)

**6a. Public Health.**—Methods of inspection and examination employed by Officers of the Public Health Service. Assigned field work will require trips to the Government and Municipal Health Departments in San Francisco, and to the Federal

\* Absent on leave, 1905-06.

Quarantine Station on Angel Island. Open to students who have completed courses 2, 3, 4, 9, and 13 in Physiology, and course 2 in Hygiene.

2 to 5 units, 2d semester, in alternate years (SNOW)

**6b. Prophylactic Measures.**—Discussions and experimental work on immunity and on the efficiency of certain chemical and physical methods of control of the transmissible diseases. [Given in 1905-06.]

2 to 5 units, 2d semester, in alternate years (SNOW)

**7. Research in Hygiene and Physical Education.**—Open to students who have had sufficient preliminary training to enable them to do independent work.

To be arranged (SNOW, STOREY)

#### ENCINA GYMNASIUM

**a. Elementary Physical Education.**—Two exercise hours a week in the Gymnasium and its open-air divisions. This work is planned for the development of strength and endurance, and is largely individual, being adapted to the requirements indicated upon physical examination. [This work is part of the requirement for course 1.] (STOREY, CHAPPEL)

**b. Advanced Physical Education.**—A continuation of course *a*, with the introduction of exercises in muscular co-ordination and control. Three hours a week. Open to students completing course *a* or its equivalent.

1 unit, both semesters (STOREY, CHAPPEL)

**c. Special Gymnastic Training.**—Special work planned for the development of co-ordination and skill on the heavy gymnastic apparatus. Three hours a week. Open to students completing two semesters of course *b* or its equivalent.

1 unit, both semesters (STOREY, CHAPPEL)

**d. Special Gymnastic Training.**—Advanced work with opportunities for training in Gymnasium methods. Three hours a week. Open only to specially qualified students who have completed two semesters of course *c* or its equivalent.

1 unit, both semesters (CHAPPEL)

#### ROBLE GYMNASIUM

**e. Elementary Physical Education.**—Given as a part of the required work for course 1. (BOLTON, TOWNSEND)

f.—Open to students who have completed course *e* or its equivalent.  $\frac{1}{2}$  unit, both semesters (TOWNSEND, ———)

g.—Open to students who have completed course *f*. Various sections will be arranged.

$\frac{1}{2}$  unit, both semesters (TOWNSEND, ———)

h.—Open to students who have completed two semesters of course *g*.  $\frac{1}{2}$  unit, both semesters (BOLTON, ———)

It is advisable for all students to consult the instructors before registering in these courses. New students intending to register for Gymnasium work should present themselves for the required physical examination as early as possible after arriving at the University.

No students are accepted in the department as candidates for a degree, but the increasing demand for university-trained instructors in Physical Education makes it desirable that some recognition be given those students who are competent to direct physical education work. A departmental recommendation will be given to students of exceptional ability who have completed courses 1, 2, 5*a*, 5*b*, the gymnasium courses in Hygiene, and courses 1 to 9 inclusive in Physiology. The Physical Training courses are carried on in Encina Gymnasium for men, and in Roble Gymnasium for women. Athletic facilities are offered in connection with each gymnasium.

#### Laboratory Fees

Roble Gymnasium, one dollar per semester; Encina Gymnasium and courses 5 to 7, two dollars each per semester.

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### ZOOLOGY

CHARLES HENRY GILBERT, Professor.

GEORGE CLINTON PRICE, HAROLD HEATH,\* Associate Professors.

JOHN OTTERBEIN SNYDER, Assistant Professor.

EDWIN CHAPIN STARKS, Curator.

WALTER KENRICK FISHER, Acting Instructor.

MILO HERRICK SPAULDING, Assistant.

**1. Elementary Zoology.**—A laboratory course involving the study of representatives of the principal groups of animals,

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\* Absent on leave, second semester, 1905-06.

together with lectures on their structure and classification, and on the general laws of biology which they illustrate.

3 units, both semesters (PRICE)

**2. The Invertebrates.**—This course, following the first year's work, is designed to give the student a broader knowledge of the morphology and relationships of the more important invertebrate groups.

3 units, both semesters (HEATH)

**3. Invertebrate Embryology.**—A study of segmentation, the formation of the germ layers, and certain phases of the later development, including the significance of larval forms and the relationships of the principal phyla. Must be preceded by course 2.

2 units, both semesters (HEATH)

**4. Advanced Work on Invertebrates.**—The original investigation of problems connected with the anatomy, embryology, or classification of invertebrates.

2 to 5 units, both semesters (HEATH)

**4a. Classification of the Invertebrates.**—A course in the classification of marine invertebrates, with studies in the habits and geographical distribution of species. Must be preceded by course 1.

2 or 3 units, both semesters (FISHER)

**5. The Vertebrates.**—A general course in the classification of vertebrate animals, with studies in the habits and the geographical distribution of species. The course will include field excursions and a study of the methods of collecting and preserving specimens.

2 units, both semesters (SNYDER)

**6. Comparative Anatomy of the Vertebrates.**—A more detailed examination of vertebrate morphology, including dissection of representatives of the several classes of vertebrates, with comparative studies in the vertebrate osteology, the nervous and circulatory systems, etc.

3 units, both semesters (SNYDER)

**7. Vertebrate Embryology.**—Development of the chick through the first three days of incubation.

2 units, 1st semester (PRICE)

**8. Vertebrate Embryology.**—A study of the early stages of the development of various classes of vertebrates, special stress being laid upon the formation of the germ-layers.

2 units, 2d semester (PRICE)

**9. Foetal Anatomy.**—Later development of vertebrates, including such subjects as the metamorphosis of the circulatory and

urogenital systems. The work will be devoted largely to the mammals.  
2 units, 2d semester (PRICE)

**10. Ichthyology.**—A course of lectures and laboratory work, including an examination of the larger groups of fishes with special reference to the characters on which they are based, and including practical work in the discrimination of species.

2 units, both semesters (GILBERT, STARKS)

**11. Advanced Ichthyology.**—Special problems in the morphology and classification of fishes will be set for advanced students prepared for such work.

2 to 5 units, both semesters (GILBERT)

**12. Journal Club.**—Open to seniors and graduate students.

2 units, both semesters (GILBERT)

Major students must before graduation complete courses 1, 2, 6, 10, 12, the first semester of courses 3 and 7, one advanced course in Zoology, and course 1 in Botany.

Work for graduate and special students will be laid out in accordance with their individual needs and preferences.

#### The Teacher's Recommendation

The Department recommendation for High School teaching in Zoology requires the completion of the following subjects: Elementary Zoology, 6 units; the Invertebrates, 6 units; the Vertebrates, 4 units; Comparative Anatomy of the Vertebrates, 6 units.

#### THE ZOOLOGICAL COLLECTIONS

The ZOOLOGICAL MUSEUM contains a very full representation of the fishes of North America, and includes among others a valuable series of the deep-water fishes of the Pacific, and large collections from the West Indies, the Hawaiian Islands, Bering Sea, Japan, the coasts of Mexico and Central America, and the Galapagos Islands. The museum contains also a large representation of the reptiles, batrachians, birds, and mammals of California and adjoining States. The development of the museum has been due very largely to the co-operation of Mr. TIMOTHY HOPKINS.

Material illustrating the principal groups of invertebrates is ample for class instruction.

#### Laboratory Fees

All laboratory courses, three dollars each per semester.



## ENTOMOLOGY AND BIONOMICS

VERNON LYMAN KELLOGG, Professor.

RENNIE WILBUR DOANE, Instructor.

MARY ISABEL MCCracken, Acting Instructor.

DAVID STARR JORDAN, Lecturer.

## ENTOMOLOGY

**1. Elementary Entomology.**—The elementary study of insect structure, metamorphosis, habits and classification, including practice in collecting and preserving specimens.

3 units, either semester (McCracken)

**2. Morphology and Development of Insects.**—Continuation of the preceding course, including the study of the comparative morphology of adult and larval forms, and of insect life-history.

3 units, either semester (Kellogg, McCracken)

**3. Insect Ecology and Economic Entomology.**—The ecologic relations of insects, with special attention to the scale insects (Coccidæ) and others of economic importance in California. Must be preceded by courses 1 and 2.

2 or 3 units, both semesters (Kellogg, Doane)

**4. General Entomology.**—A course of lectures and demonstrations. Open to students who have had some work in Biology (Zoology, Botany, or Physiology).

2 units, 2d semester (Kellogg)

**5. Advanced Work.**—Advanced study and investigation of the biology of insects. Laboratory and field work.

2 to 5 units, both semesters (Kellogg)

Work for graduate and special students will be specially arranged.

Major students in Entomology must obtain before graduation twenty-four units' credit in Entomology, and credit for course 1 in Zoology, course 1 in General Botany, and course 3 in Systematic Botany, making forty units in biological subjects. Some previous work in Biology should be done before taking up any course in Entomology.

The *Entomological Collections* contain authoritatively determined specimens, accessible for comparison, in all of the insect orders, and include many sets of specimens illustrating the development and habits of insects. There is included, also, the

most important existing collection of North American Mallophaga, comprising the types of four-fifths of all the species so far described from North America and the Pacific Islands, an unusually large collection of Coccidæ (scale insects), and a valuable series of specimens from the Galapagos Islands.

### BIONOMICS

**6. Organic Evolution.**—Lectures on the laws or principles of biology and the factors in organic evolution. Not open to first-year students.

2 units, both semesters (JORDAN, KELLOGG)

#### Laboratory Fees

Three dollars per semester for each laboratory course.

## GEOLOGY AND MINING

JOHN CASPER BRANNER, JAMES PERRIN SMITH, Professors.

JOHN FLESHER NEWSOM\*, Associate Professor.

DORSEY ALFRED LYON, AUSTIN FLINT ROGERS, Assistant Professors.

GALEN HOWELL CLEVINGER, Instructor.

FREDERICK WILLIAM NOBS, WILLIAM OTTERBEIN CLARK, ROBERT NYM PARK, ROY SELDON KELLOGG, Assistants.

Students intending to make Geology and Mining their major subject should offer, as a part of their entrance preparation, solid geometry, trigonometry, advanced algebra,† physics, chemistry, zoology, and French or German, or both; otherwise the mathematics, physics, and chemistry must be taken in the University.

The following is a summary of the courses that lead to the degree of Bachelor of Arts in Geology and Mining:

**FIRST YEAR**—Applied Mathematics 4 (5 units); Chemistry 1, a, 6, b (10 units); Engineering 1a, 1b (6 units); Physics 7 (4 units). Total 25 units.

**SECOND YEAR**—Applied Mathematics 5, 6 (16 units); Chemistry d (4 units); Civil Engineering 4a (5 units); Geology and

\*Absent on leave, 1905-06.

† Students presenting trigonometry and advanced algebra as entrance subjects are required to pass a satisfactory special examination in those subjects, otherwise courses 1 and 3 in Applied Mathematics must be taken during the first year in the University.

Mining 5 (6 units); Mechanical Engineering 2 (2 units). Total 33 units.

THIRD YEAR.—Engineering, 2, 3a (7 units); Mechanical Engineering 3c, 6 (7 units); Geology and Mining 1, 2, 3†, 4†, 6, 9, 11a, 11b (20 units). Total 34 units.

FOURTH YEAR.—Geology and Mining 7a or 7b, 10a, 10b (11 units); Chemistry e or Geology and Mining 11e (3 units); Civil Engineering 8c (3 units); Mechanical Engineering 8d, 9 (5 units); Electrical Engineering 1 (4 units); Engineering 3b (2 units). Total 28 units.

**1. Dynamic and Structural Geology.**—Lectures, with syllabus. 3 units, 1st semester (BRANNER)

**1a. Physiography.**—Lectures, with syllabus. 1 unit, 2d semester (BRANNER)

**2. Economic Geology.**—Lectures, with syllabus. Open to students who have completed course 1. 2 units, 2d semester (BRANNER, NEWSOM)

**3. Topographic Geology.**—Field and laboratory work, with the construction of geologic maps, models, and sections. Open to students who have completed course 1 in Geology, and course 4b in Civil Engineering.

4 units, summer vacation (BRANNER, NEWSOM, PARK)

**4. Field Geology.**—Field practice in working out geology in the field and its representation upon topographic maps and sections. Prerequisites: Geology 1 and Civil Engineering 4b.

1 to 5 units, summer vacation (BRANNER, NEWSOM, NOBS)

**5. Mineralogy.**—(a) Methods of study and of determination of minerals, including Crystallography and Blowpipe Analysis (first semester); (b) Study of 200 important minerals (second semester). Prerequisite: Chemistry 1 and a.

3 units, both semesters (ROGERS, CLARK)

**6. Petrography.**—(a) Crystal optics and study of rock-forming minerals in thin sections (first semester); (b) Study of principal rock types, igneous, sedimentary, and metamorphic (second semester). Prerequisite: Geology and Mining 5.

3 units, both semesters (ROGERS)

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† Geology and Mining 3 and 4 (Topographic and Field Geology) must be taken during the summer vacation.

**7. Paleontology.**—*a.* Systematic Paleontology, or the history and character of organisms (first semester). *b.* Historical Geology, or the history and character of geologic formations (second semester). Open to students who have completed course 1.

2 to 4 units, 1st semester; 4 units, 2d semester

(J. P. SMITH)

**8. Paleontology.**—Original investigation of various problems in paleontology, especially of invertebrate morphology, and of the distribution of faunas. This course will consist entirely of private work, in field and laboratory. Open to advanced students and graduates.

2 to 5 units, both semesters (J. P. SMITH)

**[9. Assaying.]**—Open to students who have completed course *d* in Chemistry and courses 1 and 2 in Geology. This course is the same as course *n* in the Department of Chemistry.]

3 afternoons, either semester (LENOX)

**10. Mining.**—*a.* Lectures on mining operations and methods, including prospecting, development, methods of working, timbering, shaft sinking, and hoisting.

4 units, 1st semester (NEWSOM)

*b.* Continuation of *a*, including drainage, ventilation, and ore-dressing.

3 units, 2d semester (NEWSOM)

# **11. Metallurgy:**

**11a. General Metallurgy.** Four lectures a week throughout the semester. Open to students who have completed Chemistry 2.

4 units, 2d semester (LYON, CLEVINGER)

**11b. General Metallurgy Laboratory.** Open only to those who have completed course 9 and who are taking or have had course 11a.

2 units, 2d semester (LYON, CLEVINGER)

**11c. Metallurgy of Constructive Materials.** A study of the manufacture and physical properties of iron, steel, and other alloys, with reference to their selection as constructive materials. Two lectures a week, and one afternoon of laboratory work. Students taking this course are expected to have a knowledge of Elementary Chemistry.

2 or 3 units, 1st semester (LYON, CLEVINGER)

**11d. Metallography and Physics of the Metals.**—Recitations, reading and laboratory work. Howe's "Iron, Steel, and Other

Alloys" will be used as a text. The laboratory work will include a study of the microstructure of the industrial metals and alloys, and of the influence of chemical composition, thermal and mechanical treatment, upon their structure. Also the relation of the structure of metals and alloys to their physical properties. Open only to students who have completed Chemistry 2, *d*, and *j*.  
3 to 5 units, either semester (LYON, CLEVENGER)

**11e. Metallurgical Laboratory.**—Considerable option will be allowed in the work of this course. A student may either take up some problem or problems in connection with the extraction of metals from their ores, such as the facilities of the laboratory will permit, or he may take up advanced work in the physics of metals, metallography, etc. Students wishing to take up work in connection with the extraction of metals from their ores must have completed Chemistry *d* and *e*, or their equivalent. Those wishing to take up advanced work in the physics of the metals, metallography, etc., must have completed Chemistry *d* and *j*, or their equivalent.

3 to 5 units, either semester (LYON, CLEVENGER)

**12a. Crystal Morphology.**—Measurement, calculation, and delineation of crystals. 2 units, either semester (ROGERS)

**12b. Mineralogy.**—Original Investigations in Mineralogy and Petrography. This course consists entirely of private work in field and laboratory. Open only to advanced students and graduates.  
2 to 5 units, both semesters (ROGERS)

**13. Paleontology.**—Lectures on special topics. Open to advanced students and graduates.

1 unit, 1st semester (J. P. SMITH)

**14. Special Courses.**—Special courses of instruction and training are laid out for advanced and special students according to the needs and qualifications of each individual. Special investigations are taken up by advanced students as rapidly as it is possible for them to undertake such work advantageously.

1 to 5 units, both semesters (BRANNER, NEWSOM)

[Courses in mine surveying, the designing of mining machinery and mine structures, and in mineral analysis are also given; see Departments of Civil Engineering, Mechanical Engineering, and Chemistry.]

## Laboratory and Syllabus Fees

Five dollars for the second semester in courses 5 and 11c; ten dollars each in courses 11a, 11b; ten to twenty-five dollars each in courses 11d and 11e, according to the number of units taken. Syllabus fee, two dollars and fifty cents each in courses 1 and 2.

## ENGINEERING

## A. ENTRANCE SUBJECTS

Students intending to take their major in one of the Engineering Departments are advised, though not required, to present, among their entrance subjects, advanced algebra,\* solid geometry, trigonometry,\* physics, drawing, and German or French. Special students should have completed entrance English, elementary algebra, and plane geometry. (See pp. 37-62.)

## B. GENERAL COURSES

## I. Applied Mathematics

**First-Year Courses:**—Algebra; Solid Geometry; Trigonometry; Co-ordinate Geometry.

**Second-Year Courses:**—Calculus; Theoretical Mechanics.

[See announcement of Department of Applied Mathematics, p. 112.]

## II. General Technical Courses

**1a. Linear Drawing and Lettering.**—(Drafting two afternoons a week, September and October.) Open to all students, and required of students in Engineering. The instruments and materials for this course cost from twenty to thirty dollars.

1 unit, either semester (HODGE, MAYREIS)

**1b. Descriptive Geometry.**—Including applications to shades, shadows, and perspective. (Two afternoons of drafting each week, November and December. Two lectures and two afternoons of drafting each week, January to May.) This course is open to students who have completed or are taking Solid Geometry and Engineering 1a, and is required of students in Engineering.

1 unit, 1st semester; 4 units, 2d semester (HODGE, MAYREIS)

\* Courses 1 and 3 in Applied Mathematics are required of all first-year students in Engineering, except such as have credit in the corresponding entrance subjects and also pass special examinations (see announcement of the Department of Applied Mathematics, p. 121).

## 2. Applied Mechanics:

*a. Mechanics of Materials.*—Under this head are treated the theory of the strength and elastic properties of the ordinary materials of engineering construction. The main subjects covered are simple tension, compression, and shear; theory of flexure, with applications to simple and continuous beams; theory of long columns; torsion; repeated stress; sudden stress and resilience. (Lectures and recitations three hours a week.)

*b. Testing of Materials.*—Each student is required to make a series of experiments, testing the strength and elastic properties of wrought iron, cast iron, steel, and wood. A careful record of all experiments is required of every student. (Laboratory work, six hours a week.)

Open to students who have completed the first and second-year courses for Engineering students in Applied Mathematics; required of all students having Engineering as a major subject.

5 units, 1st semester (WING, CUTTER, MOSER, PECK, STROUT)

## 3. Hydraulics:

*a. Hydrostatics and Hydraulics.*—This course treats of fluid pressure, the principles of fluid equilibrium, and the laws governing the flow of water through orifices, over weirs, in closed conduits, and in open channels. Open to students who have completed courses 5 and 6 in Applied Mathematics.

3 units, 2d semester (HOSKINS)

*b. Hydraulic Motors.*—A discussion of the theory of the main types of turbines, including centrifugal pumps. A few lectures on the general theory of energy and on relative motion are given as an introduction to the course. Open to students who have completed course 3a. 3 units, 1st semester (HOSKINS)

## I. CIVIL ENGINEERING

CHARLES DAVID MARX, CHARLES BENJAMIN WING, LEANDER MILLER HOSKINS, Professors.

JOHN CHARLES LOUNSBURY FISH,\* Associate Professor.

HUBERT HARRY HALL, Instructor.

HAL BREW, MYRON CARLOS BURR, JOHN FLETCHER BYXBEE, JR., LESTER LEVI CARTER, LAWRENCE EDMISTER CUTTER, GEORGE ASHMUN HODGE, LOUIS JOHN MAYREIS, ROBERT BRECK MORAN, STUART MOSER, CLAIR LEVERETT PECK, FRED ORDWAY SHUTTS, GALE STANLEY STROUT, Assistants.

## A. Topographic Engineering

**4a. Elementary Surveying.**—Instruments; systems of coordinates; methods of surveying; latitude and azimuth; errors of observation; surveys; computing and mapping. (Lectures two hours, drafting and field work nine hours, each week.) Open to students who have completed Engineering 1a and Applied Mathematics 1, 2, 3, and 4. Required of students in Civil and Mining Engineering. 5 units, either semester

(HALL, BURR, CARTER, MORAN, SHUTTS, 1st semester; HALL, BREW, BYXBEE, STROUT, 2d semester)

**4b. Elementary Surveying.**—Course 4a abridged for students in Mechanical and Electrical Engineering. (Field work, reading, and drafting, six hours each week.)

2 units, 1st semester (BYXBEE)

## B. Railroad Engineering

**6a. Railroad Surveying.**—Including the transition curve and earthwork. (Recitations two hours, drafting and field work nine hours each week.) Open to students who have completed 4a. Required of students in Civil Engineering.

5 units, 2d semester (HALL, BURR, CARTER, SHUTTS)

**6b. Railroad Location.**—Economics of location. Open to students who have completed 6a.

2 units, 1st semester (FISH)

**6c. Railroad Construction.**—(Drafting-room, two afternoons a week.) Open to students who have completed 6a, and have taken or are taking 8b. 2 units, 2d semester (FISH)

\* Absent on leave, 1905-06.



## C. Structural Engineering

**8a. Elements of Design.**

1. *Materials*.—[See course 11c, Geology and Mining.]

2. *Mechanics of Structures*.—Course 6 in Applied Mathematics is extended to the analytical and graphical determination of stresses in simple trusses. (Drafting-room, nine hours a week first half of semester.)

3. *Theory of Structural Details*.—Course 2 is extended to an investigation of the distribution of stresses in structural details. (Drafting nine hours a week last half of semester.)

Open to students who have completed course 1 in Engineering, and who have taken or are taking course 2 in Engineering, and also course 11c in Geology and Mining. Required of all students having Civil Engineering as a major subject.

3 units, 1st semester (WING)

**8b. Elements of Design.**

1. *Materials*.—Structural materials, other than metals, are studied from an engineering standpoint. Wood, stone, brick, limes, cement, etc., are considered in order. (Lectures three hours a week first half of semester.)

2. *Foundations*.—Under this head are considered the bearing power of soils, strength of piles, distribution of pressures, and similar details connected with the design of simple foundations. (Lectures three hours a week last half of semester.)

3. *Design*.—Complete designs are made, including working drawings, bill of materials, and estimate of cost, of some simple structure, such as a mill building or highway structure. (Drafting-room, nine hours a week first half of semester; six hours a week last half of semester.)

4. *Testing*.—Extending the work of course 2b. Each student is required to make a series of experiments, testing the physical properties of cement. (Laboratory, three hours a week last half of semester.)

Open to students who have completed course 8a in Civil Engineering; required of all students having Civil Engineering as a major subject.

5 units, 2d semester (WING)

**8c. Elements of Design.**—Courses 8a and 8b abridged to meet the requirements of students having Mining, Mechanical, or Electrical Engineering as a major subject. Special applications are made to hoisting and conveying structures, mill build-

ings, and central station buildings. (Hours to be arranged by consultation.)

Open to students who have completed courses 1 and 2 in Engineering, and course 11c in Geology and Mining.

3 units, 2d semester (WING)

**9. Railway Bridges.**—This course comprises the determination of the stresses in modern types of railroad bridges, including cantilever and swing spans, masonry arches, and arch ribs; the discussion of the most economical types, spans, and dimensions of bridges and bridge members; the study of the methods of constructing sub-aqueous foundations, shop methods, erection, inspection of material, specifications, and other factors influencing the design of bridges. Designs are made by each student to fulfill actual conditions, the parts proportioned, and bills of material prepared. Open to students who have completed course 8. (Lectures two hours per week, drafting nine hours.)

5 units, both semesters (WING)

#### D. Hydraulic Engineering

**12. Water-Supply Engineering for Towns and Districts.**—Sources of supply. Collecting and storing of water, either for water supply of towns or for irrigation purposes. Settling, filtering, conducting, and delivering of water, including the study and design of all accessory works. (Three hours lectures and recitations, six hours drafting.) Open to students who have completed courses 2 and 3 in Engineering and 4a and 8a in Civil Engineering; required of all students who take their major in Hydraulic Engineering. 5 units, 1st semester (MARX)

**13. Sanitary Engineering.**—Including sewerage of towns and drainage of lands. Special attention will be given to the study of all municipal sanitary problems, such as removal of sewage, destruction of garbage, construction, maintenance, sweeping, and repairs of streets and pavements. (Three hours lectures and recitations, six hours drafting.) Open to students who have completed courses 2 and 3 in Engineering and 4a, 8a, and 12 in Civil Engineering; required of all students who take their major in Hydraulic Engineering. 5 units, 2d semester (MARX)

**15. Construction of Canals, River and Harbor Improvements.**—Lectures and designing as per arrangement. Open to

students who have completed courses 2a, 2b, and 3 in Engineering, and 4a and 8a in Civil Engineering.

2 units, both semesters (MARX)

**16. Technical Seminary.**—Study of German and French technical journals. Open only to fourth-year students in Civil Engineering.

2 units, both semesters (MARX)

## II. MECHANICAL ENGINEERING

WILLIAM FREDERICK DURAND, Professor.

GUIDO HUGO MARX, Associate Professor.

ANDREW ALLEN BROWNE\*, WILLIAM RANKINE ECKART, Assistant Professors.

SAMUEL JAMES DENNIS, JULIUS EMBRET PETERSON, EDWARD JOHN STANLEY\*, JAMES BENNETT LIGGETT, THEODORE PALMATEER, JOHN STACK, Instructors.

ROBERT ALLAN HUDSON, Assistant.

The courses specified below represent the major work for the undergraduate degree with Mechanical Engineering as a major subject. In addition, the typical work for this major includes the following courses in other departments:

Applied Mathematics, 1, 2, 3, 4, 5, 6.

Engineering, 1a, 1b, 2, 3a, 3b.

Physics, 7 and 6, or 7 and 3.

Chemistry, 1 and a.

Metallurgy, 11c.

Electrical Engineering, 1.

Students entering with advanced credit may also elect such other work as time and preparation permit.

### 1. Shop Work.

a. *Woodworking.*—(Two exercises a week, half year.)

b. *Pattern-Making.*—(Three exercises a week, half year.)

c. *Forge Work.*—(Two exercises a week, half year.)

d. *Foundry Work.*—(Three exercises a week, half year.)

e. *Machine Shop Work.*—(Three exercises a week, through the year.)

Open to all students, and required of students in Mechanical Engineering.

2 or 3 units, each semester

(PETERSON, LIGGETT, PALMATEER, STACK)

\* Absent on leave.

**2. Elementary Machine Drawing.**—This work consists of practice in making freehand sketches of machine parts from which working drawings, tracings, and blueprints are developed. (Six hours a week in drafting-room.) Open to students who have completed course 1a in Engineering.

2 units, either semester (HUDSON)

**3. Elementary Machine Design:**

a. Function of machines; motion, force, and work in machines. (Three hours a week, lectures and recitations, second semester.)

b. A drafting course applying the principles treated in a. (Six hours a week drafting, second semester.)

c. An abridged drafting course intended for major students in Geology and Mining. (Three hours per week; one unit of credit.)

Open to students who have completed course 2 in Mechanical Engineering and course 1b in Engineering. Either b or c must be taken in connection with a. a and b are required of students in Mechanical Engineering.

4 or 5 units, 2d semester (G. H. MARX)

**4. Machine Design.**—Study of machine details, such as fastenings (including riveted joints and boiler design); shafting and spindles; journals, boxes, and lubrication; ball and roller bearings; sliding surfaces; couplings and clutches; gear, belt, rope, and chain transmission systems; flywheels; springs; frames; and supports. (Two hours a week recitations and lectures, six hours in the drafting-room, throughout the year.) Open to students who have completed course 3 in Mechanical Engineering, and who are taking course 2 in Engineering; required of students in Mechanical Engineering.

4 units, both semesters (G. H. MARX)

**5. Advanced Machine Design.**—A drafting-room course consisting of the design of complete machines. Intended for fourth-year students who have completed courses 4 and 6.

2 units, both semesters (G. H. MARX)

**6. Heat Engines.**—Mechanical theory of heat and its applications. (Two lectures and three hours' office work per week.) Required of third-year students in Mechanical Engineering.

3 units, both semesters (DURAND)

**7. Thermodynamics.**—A course in theoretical thermodynamics, with special reference to heat engines, and intended to supple-

ment course 6, which is a prerequisite. Required of fourth-year students in Mechanical Engineering.

2 units, 1st semester (DURAND)

**8. Experimental Engineering.**—Mechanical Laboratory. Calibration of apparatus; testing of steam engines and turbines; condensers, gas, oil, and hot-air engines; pumping machinery; boilers, economizers and heaters, blowers and fans, injectors, fuels, refrigerating machinery, etc., and the experimental investigation of correlated problems. (One lecture and six hours in the laboratory per week.) Open to students who have completed course 6, and required of fourth-year students in Mechanical Engineering.

3 units, both semesters (ECKART)

**9. Pumping Machinery.**—A lecture course for fourth-year students. Open to students who have taken course 6, first semester.

2 units, 2d semester (DURAND)

**10. The Mechanical Engineering of Central Power Stations.**—A lecture course open to students who have completed course 6.

2 units; 1st semester (DURAND)

**11. Seminary.**—A weekly conference for the discussion of current engineering literature and of special topics. Open to fourth year students only.

1 unit, 2d semester (DURAND)

#### Shop and Laboratory Fees

Courses 1a and 1b, three dollars each; courses 1c, 1d, and 1e, four dollars each; course 8, four dollars per semester.

### III. ELECTRICAL ENGINEERING

HARRIS JOSEPH RYAN, Professor.

KENNETH LIVERMORE CURTIS, SAMUEL BARCLAY CHARTERS, JR.,  
Instructors.

The courses specified below represent the major work for the undergraduate degree with Electrical Engineering as major subject. In addition, the typical work for this major includes the following courses in other departments:

Applied Mathematics, 1, 2, 3, 4, 5, 6.

Engineering, 1a, 1b, 2, 3a, 3b.

Mechanical Engineering, 1, 2, 3, 6, 8, 10.

Physics, 6, 7, 9.

Chemistry, 1 and a.

Students entering with advanced credit may also elect such other work as time and preparation permit.

**1. Elements of Electrical Engineering.**—This is an abridged course in the industrial applications of electricity intended for non-electrical engineering students. Two laboratory lectures, one recitation, and one three-hour computing period per week. Courses, 1, 2, 3, 4, 5, and 6 in Applied Mathematics and course 7 in Physics prerequisite.

4 units, 1st semester (RYAN, CURTIS, CHARTERS)

**2. Electrical Energy.\***—Required for third-year students in electrical engineering. Class and laboratory instruction in the technology of magnetic, electric, and electrostatic phenomena, electrical machinery and auxiliaries in continuous and alternate current working:

*a. Recitations and Experimental Demonstrations.*

2 units, 1st semester, 4 units, 2d semester (CURTIS)

*b. Laboratory work.*

4 units, 2d semester (RYAN, CHARTERS)

**3. Electrical Engineering.**—Required for fourth-year students in Electrical Engineering. Instruction by means of lectures, laboratory work, and design problems.

*a. Lectures* upon: (1) Structural elements and characteristics of standard electrical machinery and auxiliaries; (2) Standardization authorized by A. I. E. E.; (3) Systems of generation, control, distribution, and use of electrical energy; (4) Economy in transmission; Kelvin's law; (5) Power plants; (6) Fire hazard; National Electrical Code; (7) Municipal distribution of electricity for lighting, railways, power, and miscellaneous service; (8) Long distance transmission of power for general purposes; for railways; (9) Discussion of typical installations; (10) Elements of finance controlling the uses of electricity; (11) Survey of the electrical industries; (12) Historical and biographical sketches.

3 units, both semesters (RYAN)

*b. Laboratory work.* Characteristic performance of standard machinery and auxiliary apparatus. Engineering tests of magnetic materials, conductors, and insulations. Illumination tests of arc and incandescent lamps. Tests of machinery and auxiliaries for capacity, acceptance, and technical data.

2 units, both semesters (RYAN, CHARTERS)

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\* This course is supplemented by Physics 9, laboratory work in electrical measurements (3 units, 1st semester)

*c. Design.* Predetermination of the characteristic behavior of standard machinery from given forms and dimensions; comparison of results with those obtained by actual test in the laboratory. Elementary designs of power plants and systems of distribution; study of corresponding practice as reported in the literature and by visits to neighboring plants.

2 units, both semesters (CURTIS)

**4. Transmission of Intelligence.**—Fourth-year students in Electrical Engineering may substitute this course for 3*b* and 3*c*, second semester. Lecture, laboratory and design instruction in telephony, land, submarine, and wireless telegraph.

4 units, 2d semester (CHARTERS)

**5. Electrical Engineering Seminary.**—Required of fourth-year students in Electrical Engineering. Oral discussion by members of the class upon topics assigned. Review with general discussion of current literature and Transactions of the A. I. E. E.

1 unit, both semesters (RYAN, CURTIS, CHARTERS)

The Department acknowledges free copies of the following journals:

*The Electrical World*, New York; *The Western Electrician*, Chicago; *The Street Railway Journal*, New York; *Electricity*, New York.

#### Laboratory Fees

Two dollars per unit of university credit.

### IV. MINING ENGINEERING

[See announcements of the Department of Geology and Mining, pp. 144-148.]

### V. CHEMICAL ENGINEERING

[See announcements of the Department of Chemistry, pp. 125-130.]

## THE UNIVERSITY LIBRARY

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MELVIN GILBERT DODGE, Associate Librarian.  
JOHN EDWARD GOODWIN, Supervisor Stacks and Loans.  
LILLIAN PEARLE GREEN, Reference Librarian.  
MARTHA ELIZABETH HAVEN, Supervisor Accessions.  
ALICE NEWMAN HAYS, Classifier.  
FLORENCE HUGHES, Head Cataloguer.  
HARRIETT MILES, Supervisor Serials.  
HELEN BINNINGER SUTLIFF, Cataloguer.  
BELLE HEBER THOMPSON, Chief Desk Assistant.

The Library is open every University week day from 8 a. m. to 10 p. m., and on Saturday and during the shorter vacations from 8 a. m. to 3:30 p. m. Special hours are arranged for the summer vacation. Officers of the University, and students engaged in advanced work, upon recommendation of their instructors, have access to the shelves. Books that are not needed for special reference work are loaned for home use for a period of seven days. A card-catalogue (author, title, and subject) is being prepared. The cards for the sections of bibliography (including periodicals), philosophy, religion, sociology, history (including biography), literature, and for all books received since 1900, are already completed.

The Library now numbers eighty-eight thousand volumes. During the year ending July 31, 1905, there were added 4,425 volumes. Of these, 1,617 were by gift, the most notable being from Mr. Thomas W. Stanford, President David S. Jordan, Mr. Timothy Hopkins, Mr. Charles G. Lathrop, and Mr. J. McMahon.

The Library contains the following special collections:

The Timothy Hopkins Railway Library of six thousand volumes. This collection is unusually rich in material for the study of the early history of railways in Europe and America, and the donor has made provision for the maintenance and increase of the collection. A catalogue of the library has been published.



The Thomas W. Stanford Australasian Library of several thousand volumes and pamphlets relating to Australasia. The cataloguing of this collection is well under way.

The Hildebrand Library, consisting mainly of works on Germanic Philology and Literature collected by the late Professor Hildebrand of Leipzig.

The David Starr Jordan Library of Zoology, consisting of several thousand books and pamphlets on fishes.

In addition to the University Library, various large collections within reach are available for reference, including the Free Public, Mechanics' Institute, and other libraries in San Francisco. There are also at the University several private libraries to which advanced students have access. Notable among these is Dr. Branner's Geological Library, a list of whose periodicals has been added to the University Library catalogue.

**The Use of the Library.**—An introductory lecture, given to the entering class at the opening of the year. Description of the University Library; its contents, arrangement, and catalogues; use to be made of its resources.

**Apprentice Class.**—A limited number of University students who expect to enter the library profession may be admitted for work in the Library three hours daily throughout the year. The work is supplemented by weekly lectures in the most elementary principles of library science.

**General Bibliography.**—The aim of this course is to give practical aid to students in the preparation of bibliographies. Bibliographical method, the bibliographies of special subjects, and the principal books of reference will be discussed, and individual work carried out under direction in the University Library.

1 unit, 2d semester (DODGE)

## THE MEMORIAL CHURCH

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THE REV. DAVID CHARLES GARDNER, Chaplain.  
BENJAMIN COLMAN BLODGETT, Organist.

The MEMORIAL CHURCH was erected by Mrs. Stanford in memory of her husband, Leland Stanford, and dedicated January 25, 1903. The church stands in the center of the inner quadrangle facing the main entrance. It is of modified Moorish-Romanesque architecture, and in the form of a cross with rounded ends. The extreme length, through vestibule, nave, and apse, is one hundred and ninety feet; the extreme width, through transept wings, one hundred and fifty-five feet. The four gables of nave, transept wings, and apse are united by a twelve-sided belfry tower, whose spire, surmounted by a cross, rises to a height of one hundred and eighty-eight feet. Exteriorly the tower is flanked upon the four corners by turrets rising from the angle between the gables. It is engirdled at the base by an outside gallery, and is strengthened by an effective use of the flying-buttress. The tower contains a clock with four faces, a chime of four bells, tuned to correspond with the Westminster chimes, and twenty-four colored windows. The building is of buff sandstone, rough-hewn, with tooled face, relieved by elaborate carved designs and mosaics of great beauty. The features of the apse are the marble altar with its life-size marble figures and bas-relief of Gulio Ciseri's painting of "The Entombment," the three stained-glass windows, marble statues of the twelve apostles, and the mosaics covering the entire wall surface. Behind the altar is a replica of Cosimo Roselli's "Last Supper," from the Sistine Chapel at Rome. To the right and left, running to the arch of the apse, are long panels, picturing, in mosaic, a *gloria dei angeli*, surmounted by reproductions, also in mosaic, of Michael Angelo's prophets. The cove ceiling, springing from the crown of the great arches, is also done in mosaic, representing angels with trumpets. This cove-ceiling narrows to a thirty-two foot open circle, and through this is seen the frescoed ceiling of the true dome, one hundred and six feet above the floor. The nineteen large stained-glass windows of nave, transept, and apse illustrate the life of Christ. The windows of the clerestory

contain single figures of Old and New Testament characters. Above the organ gallery is the great rosette window, with Hoffman's Christ Child as a center picture. Flanking the rose window is the organ, separated into two parts, with the console in the center of the gallery. The organ has forty-six stops and nearly three thousand pipes, and the several parts are connected and operated by electricity. The seating capacity of the church, including galleries, is about seventeen hundred.

The Memorial Church is bound by no sectarian creed, or book, or polity; at the same time it is linked to historic Christianity through its ministry and sacraments. The services are informal and varied, conserving the great principles of Christian worship. The sacrament of the Lord's Supper is administered on the first Sunday of each month, and to it are invited all those who "love the Lord Jesus Christ in sincerity and truth."

Baccalaureate Sermon—May 21, 1905

The REV. STEPHEN BEASLEY LINNARD PENROSE, D. D., President of Whitman College.

University Preachers, 1905-06

The Rev. WILLIAM K. GUTHRIE (Presbyterian), San Francisco.

The Rev. EARL M. WILBUR (Unitarian), Oakland.

The Rev. LOUIS CRAIG CORNISH, '94 (Unitarian), Hingham, Mass.

The Rev. BURT ESTES HOWARD (Unitarian), Los Angeles.

The Rt. Rev. WILLIAM FORD NICHOLS, D. D. (Episcopal), San Francisco.

The Rev. ROBERT J. BURDETTE (Baptist), Los Angeles.

Professor RICHARD GREEN MOULTON, Ph. D., University of Chicago.

The Rev. ROBERT MCINTYRE (Methodist), Los Angeles.

Dr. SAMUEL SATTHIANADHAN (Missionary).

Select Preacher, January-April, 1906

The Rev. GEORGE HODGES, D. D., Dean of the Episcopal Theological School, Cambridge, Mass.

The Memorial Church Choir

BENJAMIN COLMAN BLODGETT, Director

Students are admitted to the choir upon the basis of a good voice, and ability to sing in tune and to read choral music. They

must have had satisfactory previous experience in choirs of reputation.

Members of the choir are required to be present at two rehearsals of an hour each per week, and to render whatever service is demanded of them in connection with the Sunday services in the church. They are also expected to be ready to respond to calls for choir service made upon them by the University during the academic year.

The work of the choir involves the study of the hymns, chants, responses, and anthems pertaining to the regular Church services, and the thorough study and public presentation of three great oratorios each semester. Optional lectures are given to the choir by the Director in the History of Sacred Music and in other subjects.

The work counts as one unit of university credit, per semester.

## UNIVERSITY LECTURES, ETC.

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Public lectures on subjects of general interest, by members of the Faculty or by persons invited from abroad, are given from time to time. The following is the list of such lectures for the calendar year ending March, 1906:

Professor ISO ABE, Waseda University, Japan—*Present Day Athletics in Japan.*

Dr. SAMUEL WENDELL WILLISTON, University of Chicago—*Ancient Sea Reptiles.*

Mr. EDWIN EMERSON—*The Inside Story of Port Arthur's Siege and Capitulation.*

Dr. CHARLES ZUEBLIN, University of Chicago—*William Morris, the Master Workman.*

Mr. HENRY P. BOWIE, President of the Japanese Society of America—(1) *Japanese Art*; (2) *The Four Paragons in Japanese Art*; (3) *The Seven Luck Gods in Japanese Art.*

Professor H. SWAN, Imperial University of Tokyo—*The Psychology of Language Teaching.*

Professor RICHARD GREEN MOULTON, University of Chicago—*"Caliban on Setebos."*

Lieutenant-Colonel A. M. LOCHVITZKY—*The Dead Past of Russia: Graft and Injustice the Cause of the Present Confusion.*

Dr. BENJAMIN COLMAN BLODGETT—*Some Prevalent Fallacies Concerning Music.*

Miss MARIE L. SHEDLOCK, of London, England—*Fun and Philosophy in Hans Christian Andersen.*

### MUSICAL RECITALS, etc.

1. Presentation of *Every Man in His Humor* by the English Club.
2. Concert by Ellery's Italian Band.
3. Concert by the Combined Musical Clubs.
4. Presentation of Goldsmith's *She Stoops to Conquer*, by the Sophomore Class.

## UNIVERSITY ASSEMBLIES

1. Professor JOHN CASPER BRANNER, and Mr. EDWARD A. CUNHA.
2. Corporal JAMES TANNER, Commander of the Grand Army of the Republic.
3. President DAVID STARR JORDAN,
4. Brigadier-General CHARLES A. WOODRUFF—*Some Military Lessons of the War in the Orient.*
5. The Hon. GEORGE E. CHAMBERLAIN, Governor of Oregon—*Problems in American Political Life*; and Mr. H. V. COE.
6. Professor WILLIAM JAMES and DEAN GEORGE HODGES—*Arbitration.*
7. President IRA REMSEN, Johns Hopkins University; Professor WILLIAM HENRY CARPENTER, Columbia University; Dean ANDREW F. WEST, Princeton University.

## COMMENCEMENT ADDRESS—May 24, 1905

Professor CHARLES DAVID MARX—*General Education of Engineers.*

## FOUNDERS' DAY ADDRESSES—March 9, 1906

Professor MELVILLE BEST ANDERSON—*Educational Ideals of the Founders*; Dean GEORGE HODGES—*The Stanford Spirit*; Professor WILLIAM JAMES—*Impressions and Forecast.*

# INTERCOLLEGIATE DEBATES

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## INTERCOLLEGIATE DEBATE

An INTERCOLLEGIATE DEBATE, under the auspices of the Associated Students of the University of California and of the Leland Stanford Junior University, is held in April of each year. In 1906 the debate will be held at Stanford University.

The Question for 1906 is, "*Resolved*, That the American game of football has done more harm than good to the ideal for which universities should exist."

## CARNOT DEBATE

The Carnot Medal, presented by the Baron de Coubertin, for the purpose of encouraging the study and discussion, in California, of French history and politics, is awarded annually to the student who, in the opinion of the judges, proves himself the best debater in a contest held for the purpose between Stanford University and the University of California.

Under the rules of 1906 a general subject for the debate was announced November 15, 1905, but the particular phase of the question, as embodied in a resolution, was not made known to the contestants until two hours before the time set for debate.

The general subject for 1906 was the Foreign Policy of the Third Republic, and the particular question debated was, "*Resolved*, That France should discontinue her policy of alliance with Russia." The debate was held at the University of California, February 2, 1906. The contestants were NORMAN ABRAHAM EISNER, FARNAM POND GRIFFITHS, and JAMES ROBERT SCOTT, of the University of California; and EDWARD ANTHONY CUNHA, WILLIAM FRASER HERRON, and DANIEL DUDLEY SALES, of Stanford. The judges were Justice FRANK M. ANGELOTTI, Justice LUCIEN SHAW, and Mr. EDWARD LANDE. The medal was awarded to NORMAN ABRAHAM EISNER, of the University of California.

## NEVADA DEBATE

By an agreement entered into between the students of the Nevada State University and of Stanford University two annual debates were arranged between representatives of the two uni-

versities, the first of which was held at Reno, Nevada, April 22, 1905. The second debate will be held at Stanford University in April, 1906.

#### THE BONNHEIM ETHICAL DISSERTATIONS AND DISCUSSION

The purpose of the Bonnheim dissertations and discussion, as defined by the founder, Mr. ALBERT BONNHEIM, of Sacramento, is as follows: "It is not so much desired to obtain new facts or new truths in ethics as it is to place the truth which we now have before as many students as possible, so that they will take greater interest in questions dealing with ethical problems." The competition is open to all undergraduate students of Stanford University, and is divided into two parts:

1. **The Bonnheim Dissertations.**—The general regulations governing the competition are as follows: Each competitor must deposit with the Registrar on or before the first Monday in November an essay upon the subject assigned by the committee. The essays must not be signed, but should have some mark of identification and be accompanied by a sealed envelope containing the name of the author. They must be typewritten on thesis paper of regulation size. They should be preceded by an outline and a bibliography, and should have accurate references. No limit of length is prescribed, but a treatment not to exceed ten thousand words is recommended. The judges will announce the names of the five competitors who present the best Bonnheim dissertations and to as many of them as shall be deemed meritorious will be awarded premiums of \$20 each.

2. **The Bonnheim Discussion.**—The winners of the Bonnheim premiums for dissertations shall be qualified to engage in the discussion, which will be upon the same subject as the dissertations, and which will be held the first or second week in December. The Bonnheim prize of \$150 will be awarded to the speaker who in his discussion of the subject shows the clearest insight and makes the most effective presentation. Each speaker will be allowed twenty minutes.

The general subject for 1905 was "The Ethics of Monopolistic Control of Industry." The judges of the dissertations were Mr. HARRIS WEINSTOCK, of Sacramento, and Professors SHOW and MILLIS; of the discussion, President JORDAN and Professors STILLMAN and MURRAY. Premiums were awarded to CHARLES LESTER GEER, '07; DANE MANSON GREER, '06; JOHN ELMER STEWART, '07;



and JAMES WHEATON MOTT, '07; honorable mention, to JOHN RAYMOND TUTTLE, '09. The Bonnheim prize was won by CHARLES LESTER GEER.

The general subject for 1906 is "The Ethics of the Modern Newspaper." The essays are due at the Registrar's Office November 5. The judges will announce the Bonnheim premiums November 19, and the discussion will take place December 7.

# UNIVERSITY ASSOCIATIONS

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## PHILOLOGICAL ASSOCIATION

Professor JOHN ERNST MATZKE, President.

Assistant Professor COLBERT SEARLES, *Secretary*.

The UNIVERSITY PHILOLOGICAL ASSOCIATION was organized September 17, 1892, for the purpose of reading and discussing the results of scientific investigations in language and literature. The membership consists of the instructors and advanced students in the different language departments in the University. The regular time of meeting is the first Thursday of each academic month, excepting September, January, and May, at 2:30 p. m. The following papers were presented during the calendar year ending March, 1906:

March 2. 1905. Professor EWALD FLÜGEL—*Plan of the Chaucer Dictionary*. Assistant Professor COLBERT SEARLES—*"Boiardo, first of the Noble Cantastorie."*

April. Mr. JAMES M. DIXON, of the University of California—*The Laws of Versification, based on Physiology*. Associate Professor OLIVER MARTIN JOHNSTON—*Use of the French Equivalents of the Latin em, en, ecce*.

October 5. Professor AUGUSTUS TABER MURRAY—*The date of the Seventh Idyll of Theocritus*. Assistant Professor BENJAMIN OLIVER FOSTER—*Notes on Propertius*.

November. Professor JOHN ERNST MATZKE—*The History of ai and ei in French before the Dental and Palatal Nasal*.

December 7. Mr. EDWARD KIRBY PUTNAM—*Aftermath Notes of the Havelock Manuscript*.

January 19, 1906. Associate Professor OLIVER MARTIN JOHNSTON—*The Story of the Blue Bird and the Lay of Ionee*.

February 9. Professor HENRY RUSHTON FAIRCLOUGH—*Notes on Vergil*. Assistant Professor COLBERT SEARLES—*The Stage-ability of the Tragedies of Garnier*.

March 1. Professor AUGUSTUS TABER MURRAY—*A Grammatical Note on Xenophon*.

## THE SCIENCE ASSOCIATION

Professor FERNANDO SANFORD, *President*.

Associate Professor GEORGE JAMES PEIRCE, *Vice-President*.

Assistant Professor ROBERT ECCLES SWAIN, *Secretary*.

The Science Association was organized January 17, 1894. Original investigations and papers of general interest on scientific topics are presented from time to time.

The following papers were read before the Association between April, 1905, and April, 1906:

Associate Professor STEWART WOODFORD YOUNG—*The Spontaneous Solidification of Supercooled Fusions and Solutions*.

Professor FRANK ANGELL—*The Interaction of Different Mental Processes*.

Professor JOHN CASPER BRANNER—*A Drainage Peculiarity of the Santa Clara Valley Affecting Fresh Water Fauna*.

Professor WILLIAM FREDERICK DURAND—*Outlying Lines of Progress in Mechanical Engineering*.

Assistant Professor ELMER REGINALD DREW—*The Mechanism of Light Radiation*.

Mr. HALBERT WILLIAM CHAPPEL—*The Evolution of the Gymnasium*.

# THE MARINE BIOLOGICAL LABORATORY

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Professors CHARLES HENRY GILBERT and OLIVER PEEBLES JENKINS, Directors.

The MARINE BIOLOGICAL LABORATORY,\* founded by the liberality of Mr. Timothy Hopkins, of San Francisco, is an organic part of the University, and constitutes a summer session for advanced biological study. The buildings are located at Pacific Grove, two miles west of Monterey, and stand on a low bluff immediately facing the sea. They consist of two two-story structures capable of accommodating about eighty students, and contain four general laboratories, one lecture-room, seventeen private rooms for special investigators, and a dark-room for photography. They are provided with aquaria, running water, and all necessary facilities for biological study. The library and apparatus of the University are available for use in the Laboratory.

## SESSION OF 1905

The Fourteenth Session of the Laboratory was held during the summer of 1905, beginning June 5th.

### Instructors

Associate Professor GEORGE CLINTON PRICE (Zoology).

Associate Professor FRANK MACE MCFARLAND (Physiology).

Assistant MILO HERRICK SPAULDING (Zoology).

### Students

#### *I. Occupying Investigators' Rooms*

BENEDICT, JAMES E., Curator of Marine Invertebrates, United States National Museum.

BURCHAM, JOHN SAMUEL, A. B., Graduate Student in Zoology, University.

KROECK, LOUIS SAMUEL, A. M., Professor of Biology, University of the Pacific.

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\*Formerly the Hopkins Seaside Laboratory.

*II. Taking Regular Courses*

ALLEN, LILY BURCH, Student in Physiology, University.  
BARKAN, HANS, Student in Physiology, University.  
CHOATE, JOSEPH LYNN, Student in Physiology, University.  
EDWARDS, CAROLYN Z., Student in English, University.  
EWING, WILLIAM FERDINAND, Student in Mathematics, University.  
HECHE, ARTHUR, Teacher in Public Schools, Niles, Cal.  
LANGSTROTH, LOVELL, Student in Chemistry, University.  
LORD, WILMA GRACE, Student in Zoology, University.  
MUNGER, ARTHUR LEE, JR., Student in Chemistry, University.  
OGIER, MARGARET, Student in Zoology, University.  
PHELPS, JOHN DUDLEY, Student in Chemistry, University.  
ROSENFELD, JAMES WENDAL, Student in Physiology, University.  
ROSS, LEE THORNTON, Student in History, University.  
SEADLER, RUTH ESTELLE, Student in Economics, University.  
SEALE, ALVIN, Student in Zoology, University.  
SPRAGUE, HELEN LOUISE, Student in Economics, University.  
THOMSON, JESSIE GIFFEN, Student in German, University.

## SESSION OF 1906

The Fifteenth Session will begin Monday, June 4th, and will extend over a period of six weeks, closing Saturday, July 14th. The laboratory will be under the general supervision of Associate Professor GEORGE CLINTON PRICE. Regular courses of instruction will be offered as follows:

1. **General Zoology.**—Open to all University students.  
(PRICE)
2. **Zoology, Advanced Course.**—Open to students who have had course 1 in Zoology, Physiology, or Botany, or an equivalent.  
(PRICE)
3. **The Structure of the Nervous System and Sense-Organs of Marine Vertebrates.**  
(STOLTENBERG)
4. **Marine Botany.**  
(HUMPHREY)

Students successfully completing any of the above courses will receive five units of university credit. Only one course can be taken during the session.

## Laboratory Fee

The laboratory fee is twenty-five dollars.

## LELAND STANFORD JUNIOR MUSEUM

HARRY C. PETERSON, Curator.

EDWIN ALONZO AUSTIN, Assistant Curator.

BUNKICHI SHIBATA, Museum Assistant.

HORACE CARL HOUGH, CARL VICTOR BURGER, WILLIAM DAVID  
BURCHAM, Assistants.

In 1880, Leland Stanford, Junior, then eleven years of age, accompanied his parents on a trip through Europe. During this journey he purchased mementoes of the various places visited—at first merely with the object of having a collection to recall the pleasures of his European trip. Later he became ambitious to broaden this collection, and in 1883, on a second trip to Europe, he began to pursue archæological researches and acquisitions with the idea of finally establishing a great museum. The Leland Stanford Junior Museum was designed by Mrs. Stanford as a memorial to perpetuate this idea, and the large and valuable additions to the original collection are mainly her gift to the Museum.

The main building is of Grecian architecture, built of solid concrete, and absolutely fireproof. The cornerstone was laid May 14, 1891, the Museum being opened to visitors in 1894. In 1899 and 1905 extensive additions to the original building were completed, making the available exhibition floor space over 200,000 square feet, with 90,000 square feet for storage purposes.

The doors are of beaten bronze, being made especially for the Museum, and patterned after the famous bronze doors in Florence, Italy. The facing of the vestibule is of a composite marble from the quarries in the Sierra Nevada Mountains in Amador County, California.

The collection made by Leland Stanford, Junior, between 1880 and 1884, has been placed in two rooms (A and B), and in room A his own arrangement is reproduced in every detail, including the labels written by himself. In the room adjoining (B) are found interesting mementoes of his early life. These two rooms are especially rich in Egyptian bronzes, Tanagra figurines, Greek and Roman glass, armor, mosaics, Sèvres and Dresden ware,

etc. Owing to lack of space, additional material belonging to this room has been placed in room T. It includes the "locomotive" hand-car and trailer, buggies, fire-engine, boat, etc., all being the personal belongings of Leland Stanford, Junior.

The Memorial Room (O) was designed to contain personal mementoes of Senator and Mrs. Stanford. Here are found ancestral portraits of the Stanford and Lathrop families; two cases devoted to the Grant family collection; racing trophies; Muybridge's first photographs of "Animals in Motion," and subsequent works; the "Last Spike," and other historical relics of the Central Pacific Railroad. To Mrs. Stanford is due the large assortment of rare lace—Point, Alençon, Chantilly, Duchesse, Honiton, Valenciennes, and others; also India shawls, fans, Worth dresses, antique jewelry, and European souvenirs.

The vestibule and upper corridor are devoted principally to statuary, old and rare books, papers, etc., including Duc de Loubat's famous reproductions of Aztec and Mexican manuscripts, a 16th century illuminated Turkish Koran of great value, Lord Kingsborough's "Antiquities of Mexico," and German engravings.

The Di Cesnola Collection (rooms C and E) contains five thousand pieces of Greek and Roman pottery and glass from the Island of Cyprus. A portion of the Greek and Roman materials gathered by Mrs. Stanford is placed on view in room D. It includes iridescent glass, Etruscan vases, Roman lamps, sculptured marble heads, and bas-reliefs of the first century.

Room F contains a valuable collection of Venetian glassware and chandeliers, mirrors, and mosaic art pieces, all the gift of Messrs. Salviati & Camerino, of Venice, Italy.

Rooms G and H are devoted exclusively to Egyptian and kindred collections. They are especially complete in mummies, sarcophagi, responders, scarabs, beads, amulets, pottery, and mummy cloth embroideries, the latter the gift of Mr. Timothy Hopkins. Dr. W. M. Flinders Petrie and Mr. H. W. Seton-Karr are represented by several cases of valuable material. Mrs. Anna Lathrop Hewes contributed a large collection of varied and valuable objects. Among the recent additions (room H) may be mentioned the famous Kyticas Collection of Egyptian antiquities, embroideries, beads, Palestine costumes, Sudanese and Bisherin armor, the Brugsch Bey Collection of bronzes, terra cottas, porcelains, etc.

The American Collection (I) is made up of mound relics, Indian baskets, Acoma ware, utensils, Alaskan canoes, totem poles, etc. In this room is also a display of material of the stone age, purchased by Mrs. Stanford in Copenhagen, Denmark.

In room J is installed the Corean Collection presented to the Museum by Mr. Timothy Hopkins. Many specimens of native dress, household utensils, sleeping mats, chests, shoes, and art products are included in the display. With them is also a set of woven embroidery samples, extending over several centuries, complete sets of which it is now impossible to obtain. The Corean and Japanese screens are very old and unique.

In the Chinese and Japanese room (K) there is a rich collection of bronzes, arms, china, lacquer, cabinets, musical instruments, rich embroideries, and specimens of wood-carving, including the Imperial bedroom set, a marvel in wood-carving and inlaid work.

In room L will be found the result of Mrs. Stanford's purchases for the Museum during her visit to Hawaii and Japan in 1902. The collection is particularly rich in cloisonne, Satsuma, porcelain, embroideries, Buddhistic images, and ivory carvings. The large bronze Koro, which is over 300 years old, in the center of the room, is one of the finest in the United States.

Room M contains the India and South Sea Islands Collection purchased by Mrs. Stanford in 1903. It is rich in embroideries, tapa cloth, silver, brass, ebony, and ivory carved ware, and native utensils. Here also is a collection of Samoan relics and war implements, given by President Jordan.

Room N contains the Ikeda Collection of Chinese and Japanese art antiques, comprising pottery, porcelains, jade, ivories, cloisonne, crystals, bronzes, armor, lacquer ware, kakemonos, and screens, purchased by Mrs. Stanford in 1904.

The Fine Arts Collections (rooms P, Q, R, S, T, U, and V) were gathered mainly by Mrs. Stanford. A very full exhibit of copies of the old masters, especially Madonnas, has been hung in room U, while in room T will be found the famous Ford Collection of California Mission paintings, twenty-four in number. At the present time there are over five hundred paintings in the Museum, including pictures by Meissonier, Bouvier, Bonnat, Richter, Carolus-Duran, Van Wyck, Bierstadt, Ch. Landelle, Courtois, Piot, Munier, Brozik, Ricci, Humphrey Moore, Porteilje, Goodwin, Bradford, E. Paoletti, Mazzoni, Keith, Hill,



Charles Nahl, and many others. "The Bridal Veil Falls of the Colorado River," by C. T. Wilson, is the gift of Mr. Charles G. Lathrop. The Anna Lathrop Hewes Collection of paintings, statuary, mosaic, etc. (room V), and a collection of pictures in oil (room Q), presented by the Hon. Thomas Welton Stanford, of Australia, are also noteworthy. The ceramics collected by Mrs. Stanford include Sèvres, Dresden, Royal Berlin, Persian, Pompadour crystal, Bohemian, Venetian, and numerous other wares.

In the Natural History Department, temporarily placed in room Y, there is a large collection of birds' eggs and skins, donated by the late Thomas Flint, of San Francisco. With them is a collection of mounted mammals, the most important being a series of the fur seals of the Pribilof Islands, presented by President Jordan. The nucleus of a mineral exhibit is in room X.

The Stanford Historical Collection is for the present installed in room T. Many of the original sketches of the competitive plans of the University are here, including the large bird's-eye view of the accepted plans by Shepley, Rutan, and Coolidge, of Boston, Mass. A full-sized photographic reproduction of the Endowment Grant, presented by Crothers and Crothers; early photographs of construction, etc. Articles especially desired are photographs of University life and incidents from 1887 to date; also lithographs, illustrations, press clippings, programs, souvenirs, copies of University publications, Quads, etc.

The Palo Alto Stock Farm exhibit is placed in room T, and contains all the records, catalogues, data, and library of the Farm; photographs, oil paintings, etc., of celebrated horses; mounted skeletons of Occident, Electioneer, and Palo Alto; the greatest and last of the high-wheeled sulkies; as well as other articles associated with the history of the Stock Farm.

Through the courtesy of Wells, Fargo & Co., all gifts intended for the Museum will be transported free of charge over their lines, in shipments of fifty pounds or less, from railroad points in California, Oregon, and Nevada, if addressed to The Curator, Leland Stanford Junior Museum, Stanford University, California.

The Museum is open to visitors daily from 10 a. m. to 5 p. m., Sundays excepted.

## CATALOGUE OF STUDENTS

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NAME	RESIDENCE	MAJOR SUBJECT
Abbott, Alden Harold,	Campbell,	History
Abbott, Frank Howard,	San Francisco,	Economics
Abright, Anne Pauline,	Palo Alto,	Latin
Abright, William Worden,	Palo Alto,	Civil Eng.
Ackerman, Irving Charles,	San Francisco,	Law
Adams, Ella May,	Palo Alto,	English
Adams, George Karrick,	Palo Alto,	Chemistry
Adams, Harold Pendleton,	Palo Alto,	English
Adams, Irving W.,	Palo Alto,	Mechanical Eng.
Adams, Morgan Orland,	Los Angeles,	Economics
Adams, Olga,	Los Angeles,	History
Adams, William Welsh,	San Diego,	Electrical Eng.
Adkinson, Laura Ruth,	Chicago, Ill.,	French
Agnew, Thomas Hugh,	Rockford, Ill.,	Civil Eng.
Ainsworth, Arthur,	Phoenix, Ariz.,	Geol. & Min. <i>Sp.</i>
Ainsworth, Howard Dearborn,	Minneapolis, Minn.,	Geol. & Min.
Albrecht, Gertrude,	San Francisco,	Law
Aldrich, John Morton,	Moscow, Idaho,	Entomology
	M. S., Univ. of Kansas, 1898.	
Alexander, Charles Ivan,	Menlo Park,	Mathematics
	B. S., University of Texas, 1902.	
Alexander, David Clifford,	Cleveland, O.,	English
Alexander, Isaac Washington,	Bakersfield,	Economics
Alexander, John Nelson,	San Rafael,	Law
Allen, Alice Mabel,	Adams, N. Y.,	Botany
Allen, Ben Shannon,	Woodland,	Law
Allmond, Mary Helen,	Seattle, Wash.,	English
Altamirano, Salvador Moya,	Mexico City, Mex.,	Mech. Eng.
Altnow, George Gustav,	Seattle, Wash.,	Philosophy
Alvord, John Hartwell,	Ventura,	English
Alward, Roy Carleta,	Fredericton, N. B.,	Law
Ambrose, Oliver Stephens,	Lockeford,	Electrical Eng.
Amend, William A.,	Los Angeles,	Law
Ames, Alden,	San Francisco,	Law

Anderson, Bonnye,	Los Angeles,	History
Anderson, Harry Young,	Camborne, B. C.,	Geol. & Min.
Anderson, Roscoe James,	Lincoln, Neb.,	History
Anderson, Roy Maxwell,	Camborne, B. C.,	Elec. Eng.
Anderson, Robert Van Vleck,	Menlo Park,	Geology
Andrews, Elizabeth Melvina,	Whittier,	Mathematics
Andrews, Esther Catharine,	Corona,	German
A. B., Whittier College, 1905.		
Aniya, Seishu,	San Francisco,	Economics
Anju, Shohachi,	Saga, Japan,	Economics
Anthony, Charles Caples,	Palo Alto,	Electrical Eng. Sp.
Applegate, Bessie Bell,	Klamath Falls, Ore.,	German
A. B., Stanford, 1905.		
Arzdroomi, Leon,	Fresno,	English Sp.
Ariake, Bunkichi,	Oakland,	Zoology
Arnold, Marguerite Bertram,	Los Angeles,	English
Ashton, George Humboldt,	Palo Alto,	Electrical Eng. Sp.
Atkins, Herbert French,	San José,	Education
A. B., Harvard Univ., 1889; LL. B., 1894.		
Atkinson, Evelyn,	Mountain View,	Latin
Atkinson, Harry Hunt,	Salt Lake City, Utah,	Law
A. B., Stanford, 1903.		
Atkinson, Mattie,	Santa Clara,	English
Atwood, Clarence Goodrich,	Monrovia,	Law
Austin, Edwin Alonzo,	Stockton,	Mining Eng.
Avery, Paul W.,	Washington, D. C.,	Chem. Eng.
A. B., Stanford, 1906.		
Avery, Yerva,	Los Angeles,	English
Aynesworth, George Levin,	Palo Alto,	Law Sp.
Bacon, Howard Little,	San José,	Law
Bailey, Bertha Coville,	Palo Alto,	German
Bailey, Forrest Cutter,	San José,	English
A. B., Stanford, 1901; A. M., 1903.		
Bailiff, Julia May,	Banning,	English
Baker, Emerson,	Forest Grove, Ore.,	Law
Baker, Mary Caroline,	Point Loma,	Physiology
Baker, Robert Henry,	Point Loma,	Mechanical Eng.
Baker, Thomas Childrey,	Los Angeles,	Geol. & Mining
Balcomb, Mary Florence,	Palo Alto,	English
Baldwin, Earl Milton,	Red Oak, Ia.,	Electrical Eng.
Ball, Chester Alexander,	Woodland,	Law
Balle, Sophia Margurite,	Denison, Iowa,	German

Balsbaugh, Mary Alice,	Palo Alto,	Latin
Bandini, Ralph,	Pasadena,	Law
Barbaree, Theophilus Horatio,	Milton, Ontario,	Mathematics
Barbour, Nathan Powell,	Lockeford,	Chemistry
Barbur, LeRoy Wright,	Los Angeles,	Geol. and Min.
Barcus, J. Franklin,	Los Angeles,	English <i>Sp.</i>
Barkan, Hans,	San Francisco,	Physiology
Barkeley, Trimble,	Los Angeles,	Mechanical Eng.
Barkley, William Sherritt,	Los Angeles,	Law
Barlow, Mary Grace,	Berkeley,	English
B. L., Univ. of California, 1905.		
Barmore, David S.,	Los Angeles,	Law
Barnett, George DeForest,	Santa Rosa,	Chemistry
Barret, Grace Ligon,	Redwood City,	German
Barrett, Don Carlos,	Edwards, Miss.,	Civil Eng.
Barrett, Richard Watts,	Stanford University,	Law
A. B., Stanford, 1904.		
Barry, Griffin Randolph,	Los Angeles,	English <i>Sp.</i>
Bartlett, Mabel Juanita,	Ventura,	German
Barton, Jesse Billings, Jr.,	Hinsdale, Ill.,	Civil Eng.
Bartruff, Jeannette Eleanor,	Los Angeles,	Latin
Bassett, Florence Jackson,	Stanford University,	French
Bateman, William George,	Salt Lake City, Utah,	Chem.
Bates, Callie Hildred,	Lawrence,	German
Bates, Frank Thomas,	Rialto,	Law
Beal, Charles Laurant,	Palo Alto,	English <i>Sp.</i>
Beal, Clyde Newton,	San Francisco,	Civil Eng. <i>Sp.</i>
Beard, Ethel Grace,	Modesto,	German
Beard, Grace Rachel,	Minneapolis, Minn.,	German
Beard, Harold Wilcox,	Hutchinson, Kan.,	Economics
Beardsley, Charles Alexander,	Campbell,	Law
Beattie, William Alfred,	Campbell,	Economics
Beckwith, Henry Truman,	Providence, R. I.,	Geol. & Min.
Bee, Charles Everett,	Cupertino,	Mechanical Eng.
Beebee, Ralph Augustus,	Gridley,	Civil Eng.
Beeger, Gertrude Margaret,	Redwood City,	German
Beeger, Pauline Marie,	Redwood City,	Physiology
Beggs, Nelle,	Ashland, Ill.,	English
Behlow, William Wallace,	Redlands,	German
Bell, Harry Wesley,	Healdsburg,	Mining Eng.
Bell, Herbert Philander,	Eureka,	Electrical Eng.

Bell, Jessie Newcomb,	Santa Barbara,	Drawing
A. B., Stanford, 1904.		
Bell, John Henry,	Palo Alto,	Mining Eng.
Bell, Rosa Edith,	Santa Rosa,	English
Bellows, Marie Florence,	Cleveland, O.,	English
Bellows, Virgil Franklin,	Cleveland, O.,	Drawing
Bennett, Lyman Hakes,	Virginia City, Mont.,	Law
Bennett, Thomas Tankerville,	Marshfield, Ore.,	Law
Benson, Caroline,	Portland, Ore.,	English
Berger, Alice Ruth,	San José,	Chemistry
Bernard, Floyd Erwin,	Sandusky, N. Y.,	Psychology
Bernard, Fred Horton,	Tucson, Ariz.,	Law
Bernard, Joseph David,	Los Angeles,	Civil Eng.
Berry, Jessie Verna,	Alameda,	Chemistry
Berry, Samuel Stillman,	Redlands,	Chemistry
Bertheau, Rudolf César,	San Francisco,	Law
Best, Alice,	Palo Alto,	English
Betz, Mary Elizabeth,	Spokane, Wash.,	German
Beverson, Letcher Robert,	San José,	Chemistry
Beyer, Earl Edward,	Rochester, Ind.,	Economics
Beyer, Forrest Baker,	Kendallville, Ind.,	Economics
Bias, Stanley Clayton,	San Francisco,	History <i>Sp.</i>
Bickel, Karl August,	Geneseo, Ill.,	English <i>Sp.</i>
Bille, Anna Matilda,	Palo Alto,	English
Bille, Mary Elizabeth,	Palo Alto,	Mathematics
Billman, Elmer Richard,	Shelbyville, Ind.,	Psychology
Binder, Hazel Mignon,	Alameda,	English
Binkley, Tholow,	Hollister,	Civil Eng.
Binns, Clyde Arthur,	Sandusky, O.,	Geol. and Mining
Bird, Jessica,	Banning,	English
Birmingham, James Everet,	Strawberry Valley,	Geol. & Min.
Bishop, Beryl Boswell,	Palo Alto,	English
Bittner, Harvey Peter,	Albuquerque, N. M.,	German
Blair, William Leeper,	San Jacinto,	Economics
Blake, Thomas Barnard,	Palo Alto,	English
Blodget, Hazelton Park,	Bakersfield,	Geol. and Min.
Blodget, Percy Langdon,	Bakersfield,	Mech. Eng. <i>Sp.</i>
Blodget, Rush Maxwell,	Bakersfield,	Law <i>Sp.</i>
Blodget, Ruth,	Bakersfield,	History
Blood, Herbert Theodore,	Denver, Colo.,	Law
Blood, Walter William,	Denver, Colo.,	Law

Blow, William Thomas,	Monterey,	Geol. and Min.
Blythe, Jeane,	Mason City, Iowa,	German
Boalt, Gilbert Denison,	Palermo,	Law
A. B., Stanford, 1908.		
Boardman, Angeline Kingsley,	Palo Alto,	English
Bodley, Grace Majella,	San José,	History
Bogle, Lawrence,	Seattle, Wash.,	Economics
Bohart, George Shambaugh,	Clinton, Ia.,	Geol. and Min. <i>Sp.</i>
Bolin, John Siegfried,	San José,	Education
Bonnell, Cornelia,	Palo Alto,	Physiology <i>Sp.</i>
Bookmyer, Ralph H.,	Sandusky, Ohio,	Law
Booth, John Carlos,	Palo Alto,	Civil Eng.
Borland, Robert Henry,	San Bernardino,	Law
Borough, Edwin Wallace,	San Francisco,	Chemical Eng.
Bothwell, Ina Grace,	Salt Lake City, Utah,	French
Botts, Pauline Ballinger,	Los Angeles,	English
Boulware, Stella,	Palo Alto,	French
Bowman, Melville Bryant,	San José,	Electrical Eng.
Boyce, Edward Jonathan,	Alameda,	Mech. Eng.
Boyce, Warren Scott,	Silwin, N. C.,	Chemistry
A. B., Wake Forest College, 1903.		
Boyd, DeEstraye Cassell,	San José,	Economics
Boyle, Harley Johnson,	Keller, Wash.,	Law
Boyle, John Clarence,	Escondido,	Law
Boyle, John Lawrence,	Raton, N. M.,	Civil Eng.
Boyle, Lewis Vincell, Jr.,	Escondido,	Law
Boynton, Julia Salter,	Los Angeles,	English
Brackett, Ross Dudley,	Pasadena,	Electrical Eng.
Brackett, William Franklin,	Pasadena,	Mining Eng.
Braddock, Ralph,	Decatur, Ill.,	History
Bradford, Clarkson Beem,	Ottawa, Ill.,	Civil Eng.
Bradley, Clarence Linn,	Visalia,	Electrical Eng.
Bradley, Nathaniel Forsyth,	Visalia,	Law
Bradley, William Harold,	San Diego,	Mech. Eng. <i>Sp.</i>
Bradshaw, Alexandra Christine,	Banning,	Drawing
Bradshaw, Blanche,	Whittier,	German
A. B., Stanford, 1906.		
Branner, Elsie,	Stanford University,	History
Branner, John Kennedy,	Stanford University,	Geology
Braun, Carl Franklin,	Cupertino,	Mechanical Eng.
Brawley, Lee J.,	Seattle, Wash.,	Economics

Brayton, Henrietta Ellen,	Palo Alto,	Entomology
Breer, Carl,	Los Angeles,	Mechanical Eng.
Brennan, James F.,	Palo Alto,	Law
Breton, Edith Lillian,	Morgan Hill,	Botany
Brew, Hal,	Puyallup, Wash.,	Civil Eng.
Brinton, Margaret,	San Diego,	Mathematics
Britton, George Edward,	Lawrence,	Latin
Broderson, Hilda Louise,	Denison, Ia.,	German
Brohaska, Catherine Margaret,	San José,	English
Brooke, Robert Dunbar,	Spokane, Wash.,	Elect. Eng.
Brooks, Joseph James,	Colusa,	Law
Brooks, Milton Jay,	Santa Rosa,	Electrical Eng.
Brooks, Willard Leroy,	Wichita, Kan.,	Economics
Brower, Irving King,	Bakersfield,	Law
Brown, Agnes Elizabeth,	Palo Alto,	English
Brown, Arvin Harrington,	Los Angeles,	Law
Brown, Edna Lucile,	Rockford, Ill.,	German
Brown, Grace Nims,	Palo Alto,	Physics

A. B., Stanford, 1902.

Brown, Harold Ralph,	San Francisco,	Law
Brown, Samuel Windsor,	San José,	Education
Brown, Thomas Guthrie,	Philadelphia, Tenn.,	Math.

A. B., Maryville (Tenn.) College, 1903.

Browne, Harry Clarence,	San Francisco,	English
Browne, Mae,	Rhineland, Wis.,	English
Bruckman, Grace Hermanita,	Palo Alto,	Physics

A. B., Stanford, 1904.

Bruning, Harry Frederick,	Oakland,	Law
Brunton, Mary Cecelia,	Salt Lake City, Utah,	English
Bryan, Barnabas,	Stanford Univ.,	Geol. and Min.
Bryan, Mary Katherine,	Anacostia, D. C.,	Botany
Bryan, Norris Pinkney,	Halltown, W. Va.,	Law
Bryant, Claribel,	Sioux City, Iowa,	German
Buchan, Dean Winslow,	Palo Alto,	Chem. Eng.
Buchanan, Edith Francis,	Los Angeles,	Latin
Buckingham, Elizabeth Lee,	Palo Alto,	English
Buell, Henry H.,	Stockton,	Electrical Eng.
Bundy, Eudora Beaufort,	Los Angeles,	Latin
Burbank, Daniel Wellman,	Santa Cruz,	Law
Burcham, William David,	Palo Alto,	Geology
Burge, Hazel Delle,	Stockton,	Drawing

Burge, Noel S.,	Stockton,	Civil Eng.
Burger, Carl Victor,	Maryville, Tenn.,	Drawing
Burgren, Arthur William,	San Francisco,	Geol. & Min.
Burke, Charles Victor,	Palo Alto,	Zoology
Burke, Mabel Claire,	Palo Alto,	Zoology
Burke, William Edmund,	Palo Alto,	Chemical Eng. <i>Sp.</i>
Burkhalter, Margaret,	Los Angeles,	History
Burr, Myron Carlos,	Monrovia,	Civil Eng.
Burritt, Edwin Wheeler,	Butte, Mont.,	Civil Eng.
Burritt, Elizabeth Sophia,	Butte, Mont.,	Latin
Bursk, Herbert Lee,	Riverside,	English <i>Sp.</i>
Burtis, Prentis Townsend,	San Francisco,	Economics
Burt, Payson Dodge,	Pasadena,	Geol. & Min.
Bush, George Barnard,	Riverside,	Law
Bustamante, Luis,	Mexico City, Mex.,	Elec. Eng.
Cadwalader, Morris Atwell,	Los Angeles,	Economics
Cadwalader, Theodore Royer,	Los Angeles,	Law
Caffee, Belle,	Terre Haute, Ind.,	Education
Calkins, Laurance George,	Davenport, Ia.,	Civil Eng.
Calland, Dean Stanley,	Springfield, Mo.,	Geol. & Min.
B. S., Beloit College, 1908.		
Cameron, Catherine Minerva,	Hanford,	Drawing
Campbell, Garth Bell,	Fresno,	Law
Campbell, Jesse Eugene,	Adin,	Law
Campbell, William Archy,	Kendallville, Ind.,	Law
Campbell, Winfield Grider,	Modesto,	Chemistry
Carpenter, John Emil,	Mountain View,	Elec. Eng.
Carpenter, Nelson K.,	Escondido,	Civil Eng.
Carpenter, Susan Wilshire,	Los Angeles,	English
Carter, Bonnie,	San Francisco,	French
Carter, Charles Marshall,	Pacific Grove,	Civil Eng.
Carter, Lester Levi,	San Francisco,	Civil Eng.
Carter, Luke Berne,	Titusville, Pa.,	Geol. & Mining
A. B., Yale Univ., 1901.		
Carter, Royle Angelo,	Fresno,	Law <i>Sp.</i>
Cary, Edward Guilford,	Palo Alto,	Physiology <i>Sp.</i>
Cary, Luella,	Palo Alto,	English
Cashbaugh, William Augustus,	Bishop,	Geol. & Mining <i>Sp.</i>
Cassell, John Francis,	San Francisco,	Law
Caswell, Albert Edward,	San José,	Mathematics
Catania, Gerald Harry,	San Francisco,	Law



Center, Inez,	Lawrence,	History
Chadwick, Howard William,	Monroe, Wis.,	History
Chaffee, Burns Stoddard,	Garden Grove,	Physiology
Chalfant, Alice Jessie,	San José,	German
Chalmers, Alexander Jessiman,	Forest Grove, Ore.,	Physiology
Chamberlin, Allen Mortimer,	San José,	Geol. & Mining
Chamberlin, Cora Eva,	Woodland,	English
Chandler, Clayton Isaac,	Selma,	Geology and Mining
Chandler, Howard Hiram,	Selma,	Geology and Mining
Chandler, Robert Bowman,	Los Gatos,	Civil Eng.
Chapman, John Frye,	Redlands,	English
Chappel, Halbert William,	Stanford Univ.,	Physiology
A. B., Stanford, 1901; LL. B., 1903.		
Charlebois, Emma Eulalie,	Ventura,	History
Choate, James Roy,	Los Angeles,	Law
Choate, Joseph Lynn,	Los Angeles,	Physiology
Christensen, Carlo Prestbye,	Kalispell, Mont.,	Elec. Eng.
Christy, Fred Chase,	Phoenix, Ariz.,	Geol. and Min.
Clark, Claudia L.,	Redlands,	History
Clark, Eldred James,	San José,	English
Clark, George Albert,	Yankton, S. Dak.,	Physics
Ph. B., Hillsdale College, 1887.		
Clark, Howard Foster,	Redlands,	Civil Eng.
Clark, Lauretta Packard,	Palo Alto,	Latin
Clark, Lettie Macelia,	San José,	History
Clark, William Otterbein,	Yale, Ill.,	Geology and Mining
A. B., Union Christian College, 1899; A. B., Stanford, 1906.		
Clark, Willis Arthur,	Greeley, Colo.,	Mechanical Eng.
Clarke, Harry Carver,	Fall River, Mass.,	Physiol. Sp.
Clarke, James Maxwell,	Stanford Univ.,	Mech. Eng.
Clarke, Julian Fairfield,	Stanford University,	Law
Clarke, Oliver Holman,	Mayfield,	Physiol. Sp.
Cleary, Mary Bissell,	San Diego,	Latin
A. B., Stanford, 1906.		
Clements, Paul Henry,	Indianapolis, Ind.,	Law Sp.
Cleveland, Earle Townsend,	San José,	Physiology
Clevenger, Galen Howell,	Palo Alto,	Geology
B. S., S. Dakota Sch. Mines, 1901; A. M., Columbia Univ., 1903.		
Clift, Denison Halley,	San Francisco,	History
Clithero, Jennie Ethel,	Boise, Idaho,	English
Close, John Manley,	San Francisco,	Law Sp.

Clough, Albert Haskell,	San Francisco,	Civil Eng. Sp.
Clover, Katharine,	Alhambra,	French
Clowe, Charles Edward,	Woodland,	Geol. & Min.
Cobb, William R.,	San Francisco,	Civil Eng.
Coe, Arthur Frederic,	Los Angeles,	Law
Coe, George Clifford,	Portland, Ore.,	Physiology
Coffman, Henry Willson,	Healdsburg,	Mining Eng.
Cole, Amos Newton,	Dubois, Pa.,	Mining Eng.
Cole, Ernest Delevan,	Santa Ana,	Civil Eng.
Cole, Jennette Margaret,	Pasadena,	English
Cole, John Lewis,	Los Angeles,	Civil Eng.
Coleman, Earl Hampton,	Cupertino,	Chemistry
Collier, Alice Honeyman,	Portland, Ore.,	Greek
Collom, Roy Edward,	Denver, Colo.,	Geol. and Min.
Colwell, Maynard R.,	Eureka,	Electrical Eng.
Conant, Rexford Hitchings,	Eureka,	Electrical Eng.
Cone, Elizabeth Hiatt,	Palo Alto,	English
A. B., Stanford, 1901.		
Cook, Jessie Loring,	San José,	History
A. B., Stanford, 1902.		
Cook, Newton Dana,	Santa Barbara,	Mech. Eng.
Cooke, Hazel Anna,	San Francisco,	French
Cooley, William Merle,	Kalispell, Mont.,	Elec. Eng.
Coolidge, Ernest Lynn,	Palo Alto,	Civ. Eng.
Coolidge, Grace,	Palo Alto,	Latin
Coolidge, John Earl,	Palo Alto,	Drawing
A. B., Lafayette College, 1904.		
Coonan, Clarence,	Eureka,	Law
Coonradt, Arthur Chapin,	Picacho,	Mech. Eng.
Cooper, Alice Cecilia,	Los Angeles,	English
Cooper, Barbara May,	Eau Claire, Wis.,	German
Cooper, Emmett C.,	Yolo,	Civil Eng.
Cooper, Samuel Wilbur, Jr.,	Wichita, Kan.,	Law
Cope, Elmo Clifton,	San Francisco,	Geol. and Min.
Corl, Edwin Jennings,	Fairmont,	Chemistry
Cortes, Charles Eliseo,	Guadalajara, Mex.,	Civil Eng.
Cory, Edith Marie,	Fresno,	German
Costar, Garrison,	Chico,	Civil Eng.
Cottle, Everett Royal,	San José,	Elec. Eng.
Cotton, Claudine,	San Francisco,	History
Couch, Mary Juanita,	Palo Alto,	Botany

Council, David Pendleton,	San Francisco,	Law
Counter, William Charles,	Mountain View,	Law <i>Sp.</i>
Courtright, Bessie Myrenda,	Palo Alto,	History
Cowan, John Francis,	Los Angeles,	Physiology
A. B., Stanford, 1902.		
Cox, Albert Brooks,	Joplin, Mo.,	Elec. Eng.
Cox, Anna Shipley,	San José,	Latin
Cox, Katherine,	Santa Clara,	History
Cox, Mabelle Lucille,	San Bernardino,	English
Cozzens, William Lloyd,	San José,	Geology and Mining
Craig, Nina Grace,	Honolulu, H. T.,	English
Cramer, Harry Putnam,	Portland, Ore.,	Electrical Eng.
Crandall, Berton Woodford,	Palo Alto,	Chemistry
Crandall, Esther,	Palo Alto,	Psychology
A. B., Stanford, 1903, A. M., 1905.		
Crandall, Roderic,	Palo Alto,	Geol. and Mining
Crandell, Ethel Mae,	Redlands,	Latin
Crane, William Frank,	Fallbrook,	Mech. Eng.
Crawford, Antoinette,	San Francisco,	English
Crawford, David Paul,	Cupertino,	Geol. & Min.
Crawford, Fred William,	San José,	Law
Crawford, Perry Orson,	Los Angeles,	Elec. Eng.
Crawford, Wendell Levi,	Cupertino,	Elec. Eng. <i>Sp.</i>
Crawford, William Elmer,	Cupertino,	Chemistry
A. B., Stanford, 1906.		
Crawford, William Oscar,	Santa Monica,	Elec. Eng.
Cree, Raymond,	Riverside,	Education
Crider, Clay Russell,	San José,	Economics
Crider, Willis Clyde,	Maitland, Mo.,	English <i>Sp.</i>
Crittenden, Franklin Avery,	Cupertino,	Law
Croghan, Margaret Anna,	Eureka,	Latin
Crook, James William,	San José,	Elec. Eng.
Croop, Arthur M.,	San José,	Education
Crosier, Mildred Irene,	Santa Ana,	English
Crow, John Franklin Whitton,	Hollister,	Geol. and Min.
Crumby, Elizabeth Julia,	Redlands,	History
Cruzan, Harold Ide,	San Francisco,	Law
Culver, Clifton Francis,	Los Angeles,	Law <i>Sp.</i>
Culver, Kathryn Lee,	Oakland,	English
Cummins, Russell Woodworth,	Covelo,	Civil Eng.
Cunha, Edward Anthony,	Milpitas,	Law

Cunningham, Athan David,	Anderson,	Mathematics <i>Sp.</i>
Cunningham, May Alice,	Sacramento,	French
Curran, Homer Fellows,	Springfield, Mo.,	Law
Curtin, Francis Andrew,	Elmira, N. Y.,	Law
Curtis, Icy Smith,	Moscōw, Idaho,	History
Curtis, Kenneth Livermore,	Stanford University,	Elec. Eng.
B. S., University of Colorado, 1901.		
Cushing, John Eldridge,	San Rafael,	Law
Cuthbertson, Alex. Macbeth,	Manchester,	Chemistry
Cuthbertson, Alice Bertha,	Palo Alto,	German
Cutler, Leland Whitman,	Palo Alto,	English
Cutter, Lawrence Edminster,	Mountain View,	Mech. Eng.
Cutting, James Arthur,	Palo Alto,	English
Dabney, Alice Marie,	Oakland,	English
Daily, Harry Parker,	Ft. Smith, Ark.,	History
Dalton, William Dorsey,	Austin, Nev.,	Chemistry
Daniels, Henry Winter,	Onsted, Mich.,	Chemistry
B. S., University of Michigan, 1898; B. S., Adrian Coll., 1902.		
Danneberg, Edna Martha,	Palo Alto,	German
Dashiell, Gertrude Morgan,	Ft. Worth, Tex.,	German
Daugherty, Robert Long,	Pasadena,	Mechan. Eng.
David, Marguerite,	Hamilton, Mont.,	English
Davidson, John Pirnie,	Los Angeles,	Mechan. Eng.
Davidson, Paul Beck,	Los Angeles,	Mechan. Eng.
Davis, Dwight M.,	Kansas City, Mo.,	Law
Davis, E. May,	Crockett,	French
Davis, Edna Grayce,	Palo Alto,	English
Davis, George William,	Willits,	Civil Eng.
Davis, Paul McDonnell,	Banning,	Mech. Eng.
Davis, Walter Halliday,	Palo Alto,	Chemistry <i>Sp.</i>
Davis, Warren A.,	Crockett,	Elec. Eng.
Dean, Arthur Forrest,	Corona,	Chemistry
Dearing, Harry Lummis,	Santa Ana,	Law <i>Sp.</i>
Delano, Preston Brady,	Palo Alto,	Law
Dennis, Horton Thompson,	Tacoma, Wash.,	Geol. & Min.
Derby, Julia,	Los Angeles,	German
Derby, William Flagg,	Alameda,	Zoology
Devendorf, Ada,	Los Angeles,	Botany
Dey, Benjamin Clifford,	Santa Cruz,	Law
A. B., Stanford, 1906.		
Dickover, Erle Roy,	Santa Barbara,	Economics

Dickover, Eva Eleanor,	Santa Barbara,	Drawing
Dickson, Philip West,	Los Angeles,	Civil Eng.
Dille, Ione Candace,	Cincinnati, Ohio,	Latin
Dillon, Isaac,	San Francisco,	Physiology
Dillon, James de Koven,	Long Beach,	Geol. & Mining
Dillon, James Root,	San Francisco,	Physiology
Doan, Norman Eugene,	Sacramento,	Law
Doane, Rennie Wilbur,	Pasadena,	Entomology
A. B., Stanford, 1896.		
Dodd, Harold Valby,	Los Angeles,	Geol. & Min.
Doig, Arthur Haldane,	San Diego,	Physiology
Dole, George Ethelbert,	Riverside,	Economics
Dole, Sanford Ballard,	Riverside,	Mech. Eng.
Donaldson, Joseph Everett,	Palo Alto,	Latin
Donley, James George, Jr.,	Auburn, N. Y.,	English
Dooley, Zemula Marie,	Atlanta, Ga.,	Latin
Dooner, Clara,	Los Angeles,	Drawing
Dorn, Grace Beatrice,	Corning,	English
Dorr, Frederick William,	San Francisco,	Law
Dorr, Harvey Emmonds,	San José,	History
B. L., University of Pacific, 1905.		
Dorwart, Helen Rebecca,	Friend, Neb.,	Latin
A. B., University of Nebraska, 1901.		
Dotten, John Knowles,	Riverside,	Economics
Dougherty, Claire Herbert,	Portland, Ore.,	Civil Eng.
Douglass, Charles York,	Stanford University,	Chemistry
Downey, Abner David,	Palo Alto,	Education
Ph. B., Colorado College, 1900.		
Downing, Samuel Robert,	Arcata,	Physiology
Dragon, Paul Louis,	Kansas City, Mo.,	Geol.-Min. Sp.
Drummond, Amasa Lybrand,	Los Angeles,	Chemistry
Duby, Marie Caroline,	Stanford Univ.,	Romanic Lang.
Dudley, Ernest Griswold,	Stanford Univ.,	Syst. Botany
Duffus, William McGlashan,	Redlands,	History
Du Flon, Thaddeus Avery,	Plainfield, N. J.,	English
Dunbar, Everett St. John,	Palo Alto,	Civil Eng.
Duncan, Ethel Canfield,	Indianapolis, Ind.,	English
Duncan, Louise,	Porterville,	English
Dunipace, Joseph Evans,	Toledo, O.,	Chemistry
A. B., Oberlin College, 1905.		
Dunlap, Lillian Susan,	Whittier,	French
Dunn, John Paul, Jr.,	Duarte,	Law Sp.

Dunn, May Alice,	Duarte,	History
Dunn, Nora Kathleen,	Stanford Univ.,	English
Dunne, James Leonard,	Palo Alto,	Civil Eng.
Durand, Wm. Leavenworth,	Stanford Univ.,	Elec. Eng.
Durst, Ethel Helena,	Sunnyvale,	Mathematics
Dyer, Edwin Francis,	Palo Alto,	History
A. B., Indiana Univ., 1891, LL. B., 1892.		
Dykes, Eldredge Bachman,	Colfax, Wash.,	Education
Earle, Edna,	Los Angeles,	History
Eastham, Wallis Fearnside,	Vancouver, Wash.,	Law
Eaton, Louis Reginald,	San Francisco,	Law
Eby, Benton, A.,	Howard, Kan.,	English
Eckstein, Pearle Marie,	Norwalk,	English
Edson, Mark Samuel,	Palo Alto,	Civil Eng.
Edwards, Carolyn Z.,	San José,	English
Edwards, Leonard Perry,	San José,	German
Edwards, LeRoy Mallory,	Palo Alto,	Law
Edwards, Paul Carroll,	Indianapolis, Ind.,	English
Edwards, William Watkin,	San José,	Civil Eng.
Ehrnbeck, Anna Julia,	Los Angeles,	German
Eichhorn, Alda Terese,	Miles City, Mont.,	Latin
Ellerbeck, Aurania,	Salt Lake City, Utah,	English
Elliott, Ada,	Orange,	German
Elliott, Agnes,	Pasadena,	History
Ellis, Annie Alexandra,	Pacific Grove,	Chemistry
Ellis, John Franklin,	Ogden, Utah,	Chemistry
Ellis, William Robert,	Los Gatos,	Geol. & Min.
Elwell, Cyril Frank,	Los Angeles,	Elec. Eng.
Elwood, Roby Theresa,	Alhambra,	German
Engle, Alfred J.,	Palo Alto,	Law
Evans, Margaret Alice,	Anaconda, Mont.,	German
Everson, Fred Leroy,	Palo Alto,	Law
Ewing, William Ferdinand,	Stanford Univ.,	Mathematics
Fair, Paul J.,	Freeport, Ill.,	Zoology
Fairfield, Edith May,	Palo Alto,	German
Falconer, Ernest Henry,	Yreka,	Physiology
Falk, Laura Bell,	Eureka,	German
Falk, Rolf Orlando,	Stoughton, Wis.,	Physiology
Farnsworth, Louis Dugett,	Salt Lake City, Utah,	Elec. Eng.
Farris, Faye Davena,	Palo Alto,	Latin
Fawcett, Edgar Oliver,	Pasadena,	Economics

Fay, William Stiles,	San Diego,	Civil Eng.
Faymonville, Philip Ries,	San Francisco,	Law
Featherstone, Gertrude D.,	Palo Alto,	Latin
Fehr, C. Fred,	Arlington, Kans.,	Law Sp.
Fenton, Kenneth Lucas,	Portland, Ore.,	Law
Ferguson, Carl Augustus,	Colton,	Elec. Eng.
Ferguson, Claude,	Bakersfield,	Chemistry
Ferguson, Roy Noble,	Colton,	Mining Eng.
Fergusson, James Grant,	Stanford University,	Latin
Fernald, George,	Chicago, Ill.,	Law
Fernandez, William,	Mexico City, Mex.,	Elec. Eng.
Ferrell, Gilbert Dane,	Creal Springs, Ill.,	Law
Ferry, Douglass Hewitt,	Lakeside,	Civ. Eng.
Fetzer, Frank Lockhart,	Denver, Col.,	Law
Field, Bernice,	San José,	English
Figg-Hoblyn, Thomas R. W. F.,	Santa Barbara,	Physiology
Finch, George W.,	Sheldon, Ia.,	Law
Finney, Clara Eugenia,	Modesto,	Mathematics
Firebaugh, Charles Ludwig,	Palo Alto,	Law
A. B., Stanford, 1904.		
Fisher, Frank Alma,	Salt Lake City, Utah,	Law
Fisher, Walter Kenrick,	Palo Alto,	Zoology
A. B., Stanford, 1901, A. M., 1903.		
Fitch, Harold,	San Francisco,	Law
Fitting, Harold Hansen,	San Bernardino,	Civil Eng.
Fitting, Ralph Ulf,	San Bernardino,	Elec. Eng.
Fitzgerald, Fred Finley,	Palo Alto,	Chemistry
A. B., Stanford, 1905.		
Fitzgerald, Katherine Gertrude,	Gilroy,	Latin
Fitzsimmons, Victor Ross,	Sebastopol,	Chemistry
Flaus, Italia Evans,	Palo Alto,	English
Fleisher, Lilian Gertrude,	Santa Maria,	Romanic Lang.
B. L., University of California, 1904.		
Fleming, Grace Elinor,	San José,	English
Fleming, Louise Kate,	San José,	English
Fleming, Ralph Douglas,	Palo Alto,	Economics
Fletcher, Arthur Ransford,	Palo Alto,	English
Flintjer, Ross,	Kansas City, Mo.,	Elec. Eng.
Flippen, Lucien Calvin,	Orange,	Physiology
Forbes, Florence Hazel,	Palo Alto,	English
Forbes, Ruth,	Chicago, Ill.,	English

Forbes, Walter Dale,	Ogden, Utah,	Chemical Eng.
Ford, Robert MacFarlin,	Los Gatos,	Law
Ford, Tod, Jr.,	Pasadena,	Economics
Ford, William Kirk,	Ukiah,	Law
Forrest, Newell Stocher,	Oakland,	Economics
Fosdick, Bertha May,	Palo Alto,	Mathematics <i>Sp.</i>
Foshay, Eleanor Anna,	Los Angeles,	English
Foss, James Calvin, Jr.,	Palo Alto,	Civil Eng.
Foster, John Moody,	Palo Alto,	Chemistry
A. B., Stanford, 1906.		
Foster, Lora Ruth,	Saratoga,	History
Foster, Mabel Gertrude,	Palo Alto,	Latin
Fowle, Carolyn Curtis,	San Francisco,	French
Fowler, Richard,	San José,	Elec. Eng.
Fowler, William Henry Begbie,	San Francisco,	Economics <i>Sp.</i>
Foy, Florence,	Los Angeles,	Economics
Frankish, Charles Goodwin,	Ontario,	Elec. Eng.
Franklin, May,	Watseka, Ill.,	French
Frederickson, Albion Fabian,	Templeton,	Elec. Eng.
Freeman, Anthony C.,	Chicago, Ill.,	Physiology
French, Davida Catherine,	San Francisco,	History
French, Henry Nelson,	San José,	Law
French, Jessie Lilla,	Pasadena,	English
Freyschlag, Cora Emma,	San José,	Drawing <i>Sp.</i>
Friedman, Abe Herbert,	San Francisco,	Economics
Fries, Frank Hecht,	San Francisco,	Economics
Frizzell, Porter Taylor,	Mitchell, Ore.,	Chemistry
Frolli, Albert William,	Salinas,	Civil Eng.
Fullaway, David Timmins,	Palo Alto,	Entomology <i>Sp.</i>
Fuller, Raymond August,	Palo Alto,	Geol. and Min.
Gabel, Alice Hermine,	Stanford University,	German
Gabel, Hermine Hainer,	Stanford Univ.,	Education
B. S., Iowa State College, 1884.		
Gage, Henry Phelps,	Ithaca, N. Y.,	Chemistry
Gage, Stephen Norris,	Oakland,	Economics
Galbraith, William James, Jr.,	Los Angeles,	Law
Gale, Helen Avery,	San José,	History
Gallois, John Eugene,	San Francisco,	Economics
Galloway, Francis Haney,	Weiser, Idaho,	Education
A. B., Stanford, 1906.		
Gamble, George Edwin,	Palo Alto,	Geol. and Min.
A. B., Stanford, 1905.		



Gamble, James Lander,	Palo Alto,	Physiology
Gandolfo, Mary Elizabeth,	San Francisco,	Geology
de Garay, Emigüe,	Palo Alto,	Mechanical Eng.
Gardner, Di Margaret,	Orange,	Law
Gardner, Dian Rathbun,	Orange,	Law
Gardner, Henri Reginald,	Orange,	Civil Eng.
Gardner, Sue Helen,	Washington, D. C.,	English
Gardner, Vera Placida,	Orange,	Chemistry
Gardner, Walter Hervey,	Oroville,	Chemistry
Garfias, Valentine Richard,	Mexico City, Mex.,	Civil Eng.
Gartzmann, Pauline,	Long Beach,	English
Gartzmann, Reeve,	Long Beach,	Mech. Eng.
Gavagan, Beatrice A.,	Los Angeles,	French
Gavagan, Marie Indianola,	Los Angeles,	Spanish
Gay, Leslie Rowell,	Redlands,	Geol. and Min.
Gebb, William Stanley,	Jerome, Ariz.,	Chemistry
Geer, Charles Lester,	Campbell,	Law
Geibel, Martin Leo,	Butler, Pa.,	Law
George, Harry Frederick,	Astoria, Ore.,	Economics
George, Harry Wescott,	Palo Alto,	Psychology
George, Melvin Frederick,	Los Angeles,	Economics
George, Sada Laura,	Whittier,	History
Gerard, Bess,	Long Beach,	English
Gerlach, Andrew Jesse,	Los Gatos,	Chemistry
B. L., University of Pacific, 1906.		
Gerlach, Percy Adelbert,	Los Gatos,	Physiology Sp.
Gherini, Leopoldine Charlotte,	San Francisco,	Greek
Gibbons, Oscar,	Paso Robles,	Law
A. B., Stanford, 1905.		
Gibbs, Harry Drake,	San Francisco,	Chemistry
B. S., Cornell Univ., 1894.		
Gibson, Cora Helen,	Lakeport,	English
A. B., Stanford, 1904.		
Gibson, Elmer Andrew,	Ukiah,	Civil Eng.
Gibson, Flora Edna,	Templeton,	Latin
Gibson, Irving Deane,	San Francisco,	Law
Gibson, James A.,	Los Angeles,	Law
Gibson, Tom Masson,	Crystal Springs, Wn.	Law
Giebel, Carl Davis,	Sandusky, O.,	Chemistry
Gilbert, Florence,	San Bernardino,	English
Gilbert, Grace McMillan,	Santa Barbara,	History

Gilbert, Ruth Hughes,	Stanford University,	English
Gilbert, Winifred Hughes,	Stanford University,	History
Gilchrist, Geraldine Fay,	Vinton, Ia.,	English
Gillett, Effie May,	Eureka,	English
Gillmore, Elizabeth May,	Santa Barbara,	History
Gillmore, Jessie,	San Diego,	Physiology
Gilman, Arthur Francis,	Banning,	Chemistry
Gilman, Harold Arthur,	Redlands,	English
Gilmore, Sadie Lois,	San José,	Mathematics
Glasscock, William Leon,	New Boston, Ill.,	History
A. B., Indiana University, 1905.		
Gleim, Edgar Miller,	Portland, Ore.,	Geol. and Min.
A. B., Stanford, 1906.		
Glendenning, Roy James,	Santa Clara,	Law
Gonsalves, Louis,	Mendocino,	Law
A. B., Stanford, 1905.		
Goodell, Gorham Lane,	Portland, Ore.,	Civil Eng.
Goodell, James McLain,	Palo Alto,	Mech. Eng. <i>Sp.</i>
Goodrich, Roy Roberts,	San Luis Obispo,	English
Goodspeed, Lillian Mildred,	Palo Alto,	Latin
Goold, Herbert S.,	San Francisco,	English
Gordon, J. Turberville, Jr.,	Azusa,	Law
Goshorn, Joseph Ford,	Kalispell, Mont.,	Mech. Eng.
Gossett, Evangeline Singleton,	Palo Alto,	English
A. B., Stanford, 1906.		
Gossett, Joseph Orland,	Palo Alto,	Chemistry
Gott, Raymond Arthur,	Alameda,	Law
Goudy, Franklin Burris,	Denver, Colo.,	Geol. and Min.
Gove, George Ross,	Palo Alto,	Greek
A. B., University of Wisconsin, 1904.		
Gowan, Arthur Jewell,	Los Angeles,	Electrical Eng.
Gowan, Bela Elmer,	McMinnville, Ore.,	English
Grace, Florence Mary,	Rivera,	Mathematics
Graham, Mary Thornly,	San José,	Greek
Grau, Miriam Stedman,	San Francisco,	Physiology
Grau, Otto Karl,	Sacramento,	History
Gray, Mabel Sabrina,	Albany, N. Y.,	German
Green, Edward Anthony,	Mountain View,	Physiology
Green, Eldridge,	San Mateo,	Elec. Eng.
Green, Harry Carlton,	Wheatland, Ind.,	Economics
Green, Helen,	Stanford Univ.,	English

Green, Isaac Leander,	Preston,	Law
Green, Lucius Peyton,	Mountain View,	Law
A. B., Stanford, 1905.		
Greene, Elbert Daniel,	Pueblo, Colo.,	Mech. Eng.
Greenwood, Harlow Verne,	San Francisco,	Law
Greer, Dane Manson,	Stanford Univ.,	Chemistry
A. B., Stanford, 1906.		
Gregg, Beryl La Grande,	Palo Alto,	Law
Gregg, Ruth Bailey,	Palo Alto,	Mathematics
A. B., Stanford, 1906.		
Gregory, William Truxtun,	Suisun,	Law
Griffith, Thomas Brotherton,	Wichita, Kan.,	Economics
Grinnell, Fordyce, Jr.,	Pasadena,	Entomology
Groshong, Millard Pierce,	Burbank,	Civil Eng.
Grove, Albertina Harriet,	Palo Alto,	Drawing
Gude, Julie Augusta,	Los Angeles,	English
Gundrum, Eloise Fretageot,	Riverside,	History
Gunst, Morgan Arthur,	Burlingame,	Law
Guthrie, Vincent Raymon,	Rocky Ford, Colo.,	Civil Eng.
Haas, Caroline,	San José,	English
de Haas, Jacob Anton,	The Hague, Holland,	German
Hackley, Robert Edward,	Mayfield,	Civil Eng. <i>Sp.</i>
Hadden, Georgina Evelyn,	Palo Alto,	Zoology
Hadley, Clyde Musgrave,	Bellingham, Wash.,	Law
Hadley, Earl Jonathan,	Bellingham, Wash.,	English
Hadley, Mildred Monroe,	Los Angeles,	French
Hainer, Julia,	Lincoln, Neb.,	German
Hainer, Laura,	Lincoln, Neb.,	German
Halcombe, Norman Marshall,	Taranaki, N. Z.,	Elec. Eng. <i>Sp.</i>
Hale, Frederic Albert, Jr.,	Salt Lake City, Utah,	Geol. & M.
Hall, Anna Gertrude,	Santa Clara,	English
Hall, Byron Macaulay,	Fremont, Neb.,	Law <i>Sp.</i>
Hall, Ethel Blanche,	Sacramento,	French
Hall, W. Hayes,	San José,	English
Halloran, Edwin Francis,	Palo Alto,	Geol. and Min.
Halloran, Lewis Fred,	San Francisco,	Mech. Eng.
Halsey, Edna Gerardine,	Santa Cruz,	Latin
Halsey, Gerald C.,	Redwood City,	Law
Halsey, Mildred,	Redwood City,	German
Halsey, Milo Clinton,	Los Angeles,	Civil Eng. <i>Sp.</i>
Halsey, Stella Duffield,	Honolulu, T. H.,	History

Hamilton, Archibald McD.	Polo, Ill.,	Law
Hamilton, Aymer Jay,	Mayfield,	Law Sp.
Hammond, Hallie Wray,	Syracuse, N. Y.,	Geol. & Min.
Hammond, Karoline Silliman,	San Diego,	Latin
Hammond, Peter Homer,	Palo Alto,	Latin
A. B., Stanford, 1905.		
Hampson, Alfred Aubert,	Washington, D. C.,	Law
Hampson, George Harvey,	Clovis,	Physiology
Hampson, Joseph Hale,	Palo Alto,	Chemistry
Hampton, Chilton,	Palo Alto,	Psychology
Hampton, George Washington,	Grand Junction, Colo.,	Law
Hanna, Junius Robert,	Bradford, Pa.,	Electrical Eng.
Hansen, Edna Marie,	San Mateo,	Latin
Harbaugh, Ross Wallace,	Palo Alto,	Chemistry
Harkins, William Draper,	Missoula, Mont.,	Chemistry
A. B., Stanford, 1900.		
Harman, William Carpenter,	Bakersfield,	Elec. Eng.
Harnan, William Lewis,	Butte, Mont.,	Chemistry
Harris, Harry Benjamin,	Carrollton, Ky.,	Civil Eng.
Harris, Miriam Alice,	Santa Clara,	History
Harris, Raymond Sallee,	Sacramento,	English
Hart, James Vivian,	Sacramento,	Law
Hart, Lowell Jay,	Palo Alto,	Geol. & Min.
Hartzell, Phillip Nicola,	Palo Alto,	Chemistry
Haskell, Edward Eben,	Pasadena,	Civil Eng.
Haskett, Don Stanley,	Ft. Smith, Ark.,	Economics
Hastings, Russell Platt,	Soncy, Bermuda Is.,	Civil Eng.
Hatch, Homer J.,	Paso Robles,	Mech. Eng.
Havenner, Franck Roberts,	Baltimore, Md.,	Mathematics
Haver, Harold McCuller,	Redlands,	Elec. Eng.
Haviland, Edwin, Jr.,	Stanford Univ.,	Mathematics
B. S., Swarthmore Coll., 1885; A. M., Cornell Univ., 1899.		
Haws, Murray Willman,	San Bernardino,	Mech. Eng.
Hayden, Mary Calvert,	Tempe, Ariz.,	English
Hayes, Alice Sedonie,	Denver, Colo.,	German
Hayes, Claude Lee,	Pacific Grove,	Geol. & Min.
Hayes, Harriet,	Palo Alto,	English
Haynes, Walter,	Palo Alto,	Elec. Eng. Sp.
Hayslip, Eva Lois,	Sunnyvale,	English
Hayward, Emma,	San Carlos,	Economics
Hayward, Jeanette May,	Santa Barbara,	Drawing

Hazeltine, Katherine S.,	San José,	English
Hazen, Coralyn,	Modesto,	German
Hedemann, Carl Kalani,	Honolulu, H. I.,	Mech. Eng. <i>Sp.</i>
Hedum, Marie Otilie,	Miles City, Mont.,	Latin
Heffron, Harold J.,	Los Angeles, .	Civil Eng.
Heinly, Donald George,	Danville, Ill.,	Law
Hellman, Joseph A. H.,	Redwood City,	Law
Hellwig, Herbert Frederick,	San Francisco,	Geol. & Min.
Helmick, Milton John,	Denver, Colo.,	English
Hemphill, John Parks,	San José,	Economics
Henderson, Charles William,	Portland, Ore.,	Geol. & Mining
Henderson, Harry Finley,	Santa Ana,	History
Henking, Frances Corinne,	San Diego,	German
Henking, Stella Viola,	San Diego,	French
Henley, Edward Vernon,	Stanford University,	Law
Henley, Lloyd A.,	Palo Alto,	Elec. Eng.
Henry, Edith Neil,	Santa Monica,	History
Henry, Gertrude May,	Los Angeles,	English
Henry, Jean,	Monterey,	Economics
Henry, Joe Edson,	San José,	Economics
Henzel, Bertha,	San Francisco,	German
Herbert, Elmer Harlan,	San José,	Mech. Eng.
Herrmann, Frank Adolph,	San José,	Civil Eng. <i>Sp.</i>
Herron, Frederic William,	Napa,	Civil Eng.
Herron, Josephine E.,	Elsinore,	Drawing
Herron, William Fraser,	Palo Alto,	History
Hetherington, Hazel Camille,	Stanford Univ.,	Chemistry
Hettman, Frederick Jacob,	Mayfield,	Elec. Eng.
Heuston, Benjamin Burgess,	St. Paul, Minn.,	English
Hickey, Joseph Richard,	San Francisco,	Law <i>Sp.</i>
Hickin, Vance,	Palo Alto,	Chem. Eng.
Hicks, William Wesley,	San Francisco,	Elec. Eng. <i>Sp.</i>
Higley, Rose Miriam,	Palo Alto,	Zoology
Higley, Wynter Blain,	Pasadena,	Geol. & Min. <i>Sp.</i>
Hihn, Eulice William,	Palo Alto,	Mech. Eng.
Hill, Darius Betterton,	Sisson,	Elec. Eng.
Hill, Elizabeth,	Tacoma, Wash.,	History
Hill, Ella Naomi,	Redlands,	History
Hill, Frank Lloyd,	Palo Alto,	Law
Hill, Henrie Granville,	San José,	Law
Hill, John James,	Riverside,	Law

Hill, Walter Hamilton,	Peoria, Ill.,	Physiology
Hillebrand, William Arthur,	Palo Alto,	Electrical Eng.
A. B., Cornell Univ., 1900.		
Hiller, Rachel Rose,	Springfield, Ill.,	Latin
Hislop, Elizabeth,	Chicago, Ill.,	English
Hoag, Bessie Bell,	Palo Alto,	Latin
Hoag, Nellie Graham,	Palo Alto,	Latin
Hoagland, Dennis Robert,	Denver, Colo.,	Chemistry
Hockett, Neena Helen,	Whittier,	Latin
Hodgdon, Emma Florette,	Sacramento,	French
Hodge, George Ashmun,	San Diego,	Elec. Eng.
Hodge, Raymond Earl,	Rialto,	Law
Hofer, Robert McKinnie,	Salem, Ore.,	Law Sp.
Hohl, Arthur Edwin,	Oroville,	Elec. Eng.
Holcomb, Eliot,	Portland, Ore.,	Law
Holcomb, Fred Leroy,	Banning,	Drawing
Holcomb, Harry Gordon,	Banning,	Civil Eng.
Holly, Jesse Blaine,	Dixon,	Civil Eng.
Holman, John Raymond,	Portland, Ore.,	Elec. Eng.
Holman, Mary Persis,	Palo Alto,	Education
Holman, Richard Morris,	Palo Alto,	Botany
Holmes, Julia Katharine,	Los Angeles,	Drawing
Holt, Grace,	San José,	English
A. B., Stanford, 1906.		
Hook, Chestina Alma,	Riverside,	Rom. Lang.
Hooker, William Josiah,	Buffalo, N. Y.,	Civil Eng.
Hoover, Grace Amelia,	Palo Alto,	Drawing
Hopkins, Ralph Allen,	Pasadena,	Elec. Eng.
Hopper, Shirley Marie,	Fresno,	German
Hori, Ayao,	Vallejo,	Elec. Eng.
Horn, Pearl Myrtle,	Oakland,	Mathematics
Hornby, Ralph Walter,	Pasadena,	Mech. Eng.
Hornby, Raymond,	Redlands,	Chemistry
Horowitz, Elmor Eugene,	San Bernardino,	Chemistry
Horton, Harry Leonard,	Ukiah,	Civil Eng.
Hosford, Ada,	Menomonie, Wis.,	Latin
Hoskins, Lindel Margaret,	Palo Alto,	German
Hoskinson, Carl McKee,	Sacramento,	Elec. Eng.
Hottendorf, Adolph Gustav,	Honolulu, H. I.,	English Sp.
Houchins, Edward Leicester,	San Francisco,	Law
Hough, Clarence D.,	Mayfield,	Education

Hough, Horace Carle,	Red Oak, Ia.,	Elec. Eng.
Houghland, Janet Berry,	Palo Alto,	History
Houghton, Glenn Brooks,	Hedrick, Ia.,	Law
Howard, Elva,	Cloverdale,	Physiology
Howard, Ross D.,	San Francisco,	Mech. Eng.

B. S., Colorado State Agr. College, 1901.

Howe, George Washington,	Crescent City,	Law Sp.
Howell, Lucy Elizabeth,	Los Angeles,	Greek
Howes, Lyman Joseph,	Los Angeles,	English
Hudson, Robert Allan,	San José,	Mech. Eng.
Hudson, Robert Henry,	Watsonville,	Law
Huffman, Mercedes,	San Francisco,	History
Huggins, Harold Clarkson,	Portland, Ore.,	French
Hughes, Arthur Dickinson,	San Francisco,	Geol. & Min.
Hughson, Beth,	Sacramento,	Greek
Hull, Delia Mae,	Palo Alto,	Latin
Humphrey, Harry Baker,	Palo Alto,	Botany

B. S., University of Minnesota, 1899.

Hunter, Edward Ray,	Grand Jct., Colo.,	Physiology
Hunter, Helen Winifred,	Los Angeles,	German
Hunter, Hubert Samuel,	Phoenix, Ariz.,	Latin
Hunter, Katherine Isabel,	Fullerton,	Greek
Huntsberger, Glen E.,	Los Angeles,	Latin

A. B., Stanford, 1906.

Huntsberger, Ralph Francis,	Los Angeles,	History
Hurd, Katherine,	Palo Alto,	German
Hussey, George Donald,	Los Angeles,	Economics
Hussey, Laura Mandana,	Los Angeles,	English

A. B., Wellesley College, 1905.

Hutchins, Alice Agnes,	Palo Alto,	French
Hutchins, Mary Emeline,	Palo Alto,	French
Hutchinson, Harry Turner,	Huron, S. D.,	Law
Hutchinson, Joseph Kellogg,	Palo Alto,	Law
Huyck, Pearl,	Butler, Ind.,	English
Hyatt, Marguerite,	Riverside,	Zoology
Hyatt, Shirley,	Riverside,	Physics
Hyde-Smith, J. Bayard,	San Francisco,	Economics
Ichihashi, Yamato,	San Francisco,	Economics
Inahara, Katsuji,	Tokyo, Japan,	Economics
Ingalls, Clayton E.,	San José,	Elec. Eng.
Ish, Rex Whitfield,	Mayfield,	Civil Eng.

Jackson, Edward Royle,	Redding,	Law
Jackson, Frank Kennedy,	Alameda,	Law
Jackson, Hartley Everett,	Palo Alto,	Mech. Eng.
Jacob, George, Jr.,	Palo Alto,	Elec. Eng.
James, Grace Louise,	Santa Monica,	History
Jameson, Joy Gilbert,	Corona,	Mining Eng.
Jameson, Thomas Marion,	Calpella,	History
Jamieson, Josephine Janette,	Spokane, Wash.,	Latin
Jarman, Edith Louise,	San José,	History
Jeffreys, Anna Ernestine,	Sycamore,	Drawing
Jenkins, Alice Mabel,	Stanford Univ.,	Physiology
Jenkins, Hubert Oliver,	Stanford Univ.,	Zoology
Jenney, Bertram Edward,	Weiser, Idaho,	Civil Eng.
Jennison, Marjorie,	Fitchburg, Mass.,	German
Joel, Arthur,	San Francisco,	Law
Johnson, Albert Lawrence,	San Francisco,	Law
Johnson, Albert Oscar,	Portland, Ore.,	Civil Eng. Sp.
Johnson, Clark Cyrus,	Los Angeles,	Civil Eng.
Johnson, Henry Roland,	Stanford Univ.,	Geology
Johnson, James Rowland,	San José,	Electrical Eng.
Johnson, Newton A., Jr.,	Easton,	Law
Johnson, Olun A.,	Kinsman, Ill.,	Education
Johnson, Philip Royal,	Los Angeles,	Economics
Johnson, William,	Mountain View,	Elec. Eng.
Johnson, William Samuel,	Stanford Univ.,	Elec. Eng. Sp.
Johnston, Angus, Jr.,	Colton,	Electrical Eng.
Johnston, Florence Poyas,	Los Angeles,	English
A. B., Univ. of Nashville, 1892.		
Johnston, Ila Lee,	Santa Clara,	French
Johnston, John Leslie,	Redwood City,	Law
A. B., Stanford, 1904.		
Johnston, Robert Morris,	Butte, Mont.,	Elec. Eng.
Jollyman, Alice,	Cupertino,	Rom. Lang.
A. B., Stanford, 1905.		
Jones, Bertha Emma,	Los Alamitos,	English
Jones, Charles Arch,	Stockton,	Civil Eng.
Jones, Guy Pierpont,	Rockford, Ill.,	English
Jones, Kenneth Inskip,	Crockett,	Law
Jones, Robert Alton,	Burlington, Vt.,	Chemistry
Jordan, Harold Bowen,	Stanford Univ.,	Chemistry
Jordan, Walter Lyle,	Los Angeles,	Chem. Eng.
Jorgensen, Henry Garfield,	Los Gatos,	Law



Josselyn, Arthur Talbert,	San Diego,	Botany
Jourdin, Willis Wallace,	San Antonio, Tex.,	Mech. Eng. <i>Sp.</i>
Katakura, Tojiro,	Stanford Univ.,	Economics <i>Sp.</i>
Katsumata, Eiijiro,	Suruga, Japan,	Education
Kauffman, Florence,	Pomona,	English
Kawai, Taiyi,	San Francisco,	History
Kawara, Masaki,	San Francisco,	Elec. Eng.
Kay, David Nelson,	Sacramento,	Geol. and Mining
Kearne, Arthur Lindsay,	Santa Barbara,	Economics
Keesling, Hector,	San José,	Electrical Eng.
Keesling, Homer Grant,	Eden Vale,	Elec. Eng.
Keesling, Mildred Capitola,	Campbell,	English
Keiser, Emelie Caroline,	San José,	German
A. B., Stanford, 1904, A. M., 1905.		
Kelley, Charlotte Jane,	Redlands,	History
Kelley, Leigh,	Ft. Smith, Ark.,	Economics
Kellogg, Roy Seldon,	Pasadena,	Chemistry
Kelly, Frank Vincent,	Pueblo, Colo.,	Mech. Eng.
Kelly, Henry Clay,	San José,	Law
Kelly, Walter Poundstone,	Los Angeles,	Law
Kennedy, Edwin,	Livermore,	Mech. Eng.
Kennedy, James Derwent,	Honolulu, H. I.,	Economics
Kennicott, Anna Townsend,	Westcliffe, Colo.,	Chemistry
Kerr, William Horace,	Logan, Utah,	Law
Keym, Nellie Catherine,	Fairfield,	English
Kibler, Aaron Sylvester,	New Washington, O.,	Chemistry
Kilbourne, Edna Francis,	Seattle, Wash.,	French
Kilgore, William Roberts,	La Junta, Colo.,	Civil Eng.
Kimball, Letizia Moulton,	Eureka,	History
Kimball, Ruth Laird,	Stanford University,	English
A. B., Stanford, 1904.		
Kimble, Ruby,	Los Angeles,	History
Kimura, Tokuzo,	Sendai, Japan,	Zoology
King, Frances Shulze,	Banning,	English
King, Marguerite Stuart,	Banning,	English
King, Preston Wallace,	San Luis Obispo,	Mech. Eng.
Kinley, Fielden,	Santa Rosa,	Elec. Eng.
Kinney, Enid,	San José,	Drawing
A. B., Stanford, 1906.		
Kirkpatrick, Grace Fleming,	Palo Alto,	French
Kirkwood, Marion Rice,	Mountain View,	Law

Klauber, Lawrence Monroe,	San Diego,	Elec. Eng.
Klein, George,	Mountain View,	Mech. Eng.
Knapp, Bertha Jane,	Tehachapi,	German
Knipe, Olive,	Palo Alto,	English
Knollin, Herbert Edward,	Auburn, N. Y.,	Civil Eng.
Knowles, Antoinette,	College Park,	History
Knowles, Paul Valerian,	San Francisco,	Latin
Knupp, Guy,	Porterville,	Law
Kobayashi, Teiji,	San Francisco,	History Sp.
Kocher, Alfred Lawrence,	San José,	History
Kocher, Rudolph Alfred,	San José,	Physiology
Koebig, Adolf Henry, Jr.,	Los Angeles,	Civil Eng.
Koerner, William,	Oregon City, Ore.,	Geol. & Min.
Koontz, John Andrew, Jr.,	Palo Alto,	Elec. Eng.
Kramm, Hugo Edmund,	Palo Alto,	Mining Eng.
Kraps, Leo Jacob,	Portland, Ore.,	Elec. Eng.
B. S., Oregon Agr. Coll., 1901.		
Kughen, Flora Elizabeth,	Burbank,	History
Lacey, Arthur Carlos,	Buffalo, N. Y.,	Law
Lacey, Rowland Sherman,	San Diego,	History
Lachmund, Ralph Henry,	Clinton, Iowa,	Law
La Dow, Ruth,	Sandusky, Ohio,	German
Lakin, Egerton Drew,	Palo Alto,	History
Lamb, Earl,	San José,	Law
A. B., Stanford, 1905.		
Lambert, Elamae,	Woodland,	English
Lamborn, Bertha Taylor,	Palo Alto,	Latin
Lanagan, Frederic Rodgers,	Stanford Univ.,	Law
Lanagan, James Francis,	Palo Alto,	Law
A. B., Stanford, 1900.		
Lane, Ernest Allen,	Chula Vista,	Law
Lane, Fulton,	Stanford Univ.,	Geol. & Min.
Langstroth, Francis B.,	Oakland,	Geol. and Min. Sp.
Langstroth, Lovell,	Oakland,	Chemistry
Lanktree, Elizabeth Frances,	Stanford Univ.,	English
Lanktree, Maud Houston,	Stanford Univ.,	Drawing
A. B., University of California, 1902.		
Lantz, Carl Augustus,	Colton,	Chemistry
Lantz, Fred Otto,	Colton,	Elec. Eng.
Lantz, Lillian Alice,	Colton,	German
Larkins, Carol Letitia,	Visalia,	Zoology
Larnach, Alexander Deuchar,	Honolulu, H. I.,	Law Sp.

Laughlin, Charles Eugene,	El Paso, Tex., Geol. & Min. <i>Sp.</i>
Laughlin, Robert Le Roy,	Palo Alto, Law
Laumeister, Clarence F.,	San Francisco, Law
Laurens, Harry Leroy,	Livingston, Mont., Law <i>Sp.</i>
Lawry, Anna,	Redding, English
Leach, Charles Nelson,	Stanford University, Chemistry
Lee, Benjamin Yin,	San Francisco, Civil Eng. <i>Sp.</i>
Lehman, Estelle Jeanette,	Eureka, Latin
Leimert, Harry Emerson,	Oakland, Law
Leming, Gareld,	Ludlow, Ky., Law

A. B., Ohio Wesleyan University, 1904.

Lemmon, Dal Millington,	Santa Rosa, Law
Lessey, Beatrice,	San Francisco, French

A. B., Stanford, 1905.

Lester, Will I.,	Pueblo, Colo., Law
Levin, Harold,	San Francisco, Law
Levy, Edmond L.,	San Mateo, Geol. and Mining
Levy, Leo Samuel,	Virginia City, Nev., English
Levy, Leon Gambetta,	San Francisco, German

A. B., Stanford, 1906.

Lewis, Azro Nathaniel, Jr.,	Alameda, Law
Lewis, Charles Granville,	Pacific Grove, Mech. Eng.
Lewis, Charles Lux,	Alameda, Economics
Lewis, Ervin E.,	Brownville, N. Y., Education
Lewis, Howard Milton,	Palo Alto, Law

A. B., Stanford, 1904.

Lewis, James Ogier,	Pacific Grove, Geology
Lewis, Ruth Elizabeth,	San Francisco, Greek
Liebes, Leon Isaac,	San Francisco, Economics
Lilienthal, Arthur G.,	San Francisco, Economics
Lilienthal, Jesse Warren,	San Francisco, History
Limón, Gregorio,	Orizaba, Mexico, Mech. Eng.
Lipscombe, Maud May,	Saratoga, Latin
Lisle, Howard,	San José, Electrical Eng.
Littler, John Harvey,	San José, Education
Loeser, Katherine Foster,	Stanford Univ., Chemistry
Loeser, Robert M.,	Stanford Univ., Chemistry <i>Sp.</i>
Lofftus, Wilbur Grover,	Roseville, Ill., Elec. Eng.
Long, Burton Earle,	Covina, Chemistry
Lord, Wilma Grace,	Palo Alto, Zoology
Loughborough, William B.,	San Francisco, English <i>Sp.</i>

Lowe, Toy Kay,	San Francisco,	Mech. Eng.
Luce, Hughbert Swain,	Santa Rosa,	Civil Eng.
Luchsinger, Albert George,	San Francisco,	Economics
Ludwig, Ethel R.,	Palo Alto,	English
Luhrs, Arthur C.,	Phoenix, Ariz.,	Geol. & Min.
Luke, Amy Genevieve,	Berkeley,	English
Lull, Glen W.,	Los Angeles,	Mech. Eng.
Lutz, Ralph Haswell,	Seattle, Wash.,	Law
Lyman, Chester Laidlaw,	Palo Alto,	Law
Lyman, Georgina,	Ft. Smith, Ark.,	English
Lyman, Margaret Elizabeth,	Yuba City,	English
Lynn, Anita Conway,	Palo Alto,	German
Lynn, Clarence M.,	San José,	Economics
Lyons, Raymond Houston,	Los Angeles,	English
Lyons, Willard Everett,	Los Angeles,	Law
McCarton, Frank Willard,	Yreka,	Civil Eng. <i>Sp.</i>
McChesney, Horace B.,	Palo Alto,	Civil Eng.
McColloch, Claude C.,	Sumpter, Ore.,	Law
McCollough, Vernon Clare,	Los Angeles,	Law
MacCormac, Margaret E.,	Palo Alto,	Greek
McCowen, Hale, Jr.,	Ukiah,	Law
McCracken, Mary Isabel,	Oakland,	Entomology
A. B., Stanford, 1904, A. M., 1905.		
McDanell, Louise,	Los Angeles,	Chemistry
B. S., Univ. of Nashville, 1902; A. B., Stanford, 1906		
McDaniel, George William,	Salem, Utah,	Mining Eng.
MacDonald, Augustus,	Guanajuato, Mex.,	Geol. & Min.
McDonald, James Owens,	Compton,	Electrical Eng.
Macdonald, William Griffith,	Troy, N. Y.,	Law
McDonnell, Alberta,	Tacoma, Wash.,	Latin
McDonnell, Mary Agnes,	Tacoma, Wash.,	English
McDowell, Blanche Blair,	Clay Center, Nebr.,	English
A. B., Doane College, 1903.		
McDuffie, William Chester,	Santa Barbara,	Economics
McElroy, Robert Wheeler,	San Francisco,	Law
McFarland, John Cobb,	Los Angeles,	Law
MacFarland, Olive H.,	Palo Alto,	Physiology
B. L., Ohio Wesleyan University, 1893.		
Macfarlane, Guy Orear,	San Francisco,	Mech. Eng.
McGeorge, Edith,	Eureka,	German
McGilvray, Jessie D.,	Stanford Univ.,	History <i>Sp.</i>

McGovern, Anna Louise,	Palo Alto,	History
McGovern, Edward Joseph,	Palo Alto,	Law <i>Sp.</i>
McGregor, Ernest Alexander,	Stanford Univ.,	Zoology
McGregor, Gregor,	Benicia,	Mathematics
McGuire, John Perry,	Grand Jct., Colo.,	Elec. Eng.
McIntosh, George Wade,	Mentone,	Civil Eng. <i>Sp.</i>
McIntyre, Ethel Caroline,	Menlo Park,	German
McIntyre, Grace Mary,	Menlo Park,	English
MacIntyre, Helen,	Phoenix, Ariz.,	Chemistry
McKay, Cecil Curtis,	Geneva, N. Y.,	Mech. Eng.
McKell, William Scott,	Chillicothe, O.,	Physiology
McKevitt, Hugh King,	San Francisco,	Law <i>Sp.</i>
McKibben, Maud,	Palo Alto,	History
McKinley, Sara Fay,	Anaheim,	German
McLain, George Baundige,	Los Angeles,	Geol. and Mining
McLean, Hazel Douglass,	Salinas,	English
McLean, Herbert Harris,	Colton,	Civil Eng.
McMurphy, James Ira Wilson,	Porterville,	Zoology <i>Sp.</i>
McNaughten, Lena L.,	Columbus, O.,	Latin
McNeil, Warren Truett,	Tracy,	Physiology
Macomber, Frank Jewell, Jr.,	Lewis, Ia.,	Law
Macpherson, Dorothea,	Palo Alto,	English
Macpherson, Frederick Rogers,	Palo Alto,	Geol. and Min.
McQuaid, Cole Clark,	Yuba City,	Economics
MacSwain, Elizabeth Annie,	San Francisco,	German
McWethy, LeRoy,	Rialto,	Civil Eng.
Maddox, Hazel Claire,	Visalia,	Zoology
Mahon, Bert Eugene,	Ottumwa, Ia.,	Law
Mahone, Francis Douglas,	Honolulu, H. I.,	Elec. Eng.
Maine, Beatrice M.,	Riverside,	German
Malloy, Joseph Drumm,	San José,	Education
Maloy, Jeff. L.,	San José,	Law
Maloy, John W.,	San José,	Law
Manabe, Yoshiro,	Kobe, Japan,	Zoology <i>Sp.</i>
Mann, Horace,	San Carlos,	Geology and Min.
Manny, Paul,	Pacific Beach,	Geol. and Min. <i>Sp.</i>
Mansfield, George Curtis,	Los Angeles,	Law
Marceau, Daniel Victor,	Lockford,	Law
Marks, J. Glenn,	Los Angeles,	English
Marshall, Hugh Gibson,	Monrovia,	Civil Eng.
Marshall, Ralph Kerr,	Phoenix, Ariz.,	Law

Marshall, Randolph Gregory,	Des Moines, Ia.,	Law
Martin, Alice Claire,	Palo Alto, .	English
Martin, Roy,	Carmel,	Physics Sp.
Masters, William Henry,	Portland, Ore.,	Law
Mathews, Bryant,	Los Angeles,	Economics
Mathews, Ralph Berkley,	San Francisco,	Elec. Eng.
Mathewson, Arthur Adelbert,	Coronado,	Geol. and Mining
Mathiason, Gertrude Karen,	Los Angeles,	English
Mattingly, Caroline,	San Francisco,	History
Mattingly, Gladys Marie,	San Francisco,	Drawing
de Mattos, Augustine Edward,	Watsonville,	Law
May, Belle,	Baker City, Ore.,	Latin
May, Ernest Raymond,	Los Angeles,	Law
Mayers, Frank Bernard,	Phoenix, Ariz.,	Law
Mayreis, Louis John,	Stanford Univ.,	Min. Eng.
Mead, Jean Margaret,	Kansas City, Mo.,	French
Mead, Mabel,	Greeley, Colo.,	Romanic Lang.
B. S., Cornell University, 1898.		
Mealey, William Perry,	Compton,	Law
Meents, Arthur James,	Ashkum, Ill.,	Economics
Meikle, Roy V.,	Portland, Ore.,	Civil Eng.
Melczer, Isadore,	Phoenix, Ariz.,	Law
Menardi, Harold Blair,	Los Angeles,	Chemistry
Menker, Raymond Chester,	San José,	Philosophy
Merrill, Charles Holbrook,	San Francisco,	Economics
Merrill, John Albert,	San Francisco,	Law
Merrill, Lilian M.,	Los Angeles,	English
Merrill, Paul Willard,	Saratoga,	Mathematics
Merriman, Laura Elizabeth,	Palo Alto,	English
Mesa, Joseph R.,	Mayfield,	Law Sp.
Metcalf, Marie Helen,	Los Angeles,	History
Meyer, Adele,	Palo Alto,	German
Meyer, Samuel William,	San Francisco,	Chemistry
Meyers, Alfred E.,	Stanford Univ.,	Physiology
Miano, John Norton,	San José,	Elec. Eng.
Millar, Lois,	San Rafael,	Law
Millar, Paul E.,	San Rafael,	Latin
Miller, Alvera Elizabeth,	Skyland,	English
Miller, Dewey Harold,	Oakland,	Law
Miller, Edith Frank,	Sausalito,	French
Miller, Eugenia Romain,	Fresno,	English

Miller, Iva Myrtle,	Santa Ana,	German
Miller, John Martin,	Reedley,	Zoology
Miller, John Owen,	Palo Alto,	Civil Eng.
Miller, Walter Karl,	Dodge City, Kan.,	Law
A. B., Bethany College, 1904.		
Miller, William Burrows,	Dodge City, Kan.,	Civil Eng.
A. B., Bethany College, 1904.		
Milliken, Calla Rhetta,	Colton,	English
Milliken, Edward R.,	Pasadena,	Law
A. B., Pomona College, 1904.		
Millis, William Lee,	Billings, Mont.,	Geol. & Min.
Mills, Anna Rae,	San José,	German
Mills, Charlotte E.,	Peoria, Ill.,	English
A. B., Ohio Wesleyan Univ., 1901; A. B., Univ. of Chicago, 1903.		
Mills, Ross Myers,	Merced,	Law
Mills, Thomas Murray,	Riverside,	Mech. Eng.
Milner, Else Edith,	Los Angeles,	English
Minter, Lula Marie,	Santa Ana,	Latin
Minturn, Le Roy,	San Francisco,	Elec. Eng.
Mirrieles, Edith R.,	Bigtimber, Mont.,	English
Mirrieles, Lucia Bush,	Bigtimber, Mont.,	English
Mitchell, John Pearce,	Palo Alto,	Chemistry
A. B., Stanford, 1903, A. M., 1904.		
Mitchell, John Shepard,	Ontario,	History
Mitcheltree, Lota Mary,	Palo Alto,	English
Mitoma, Taizo,	Oakland,	Elec. Eng. Sp.
Mobley, Blanche Julia,	Fowler,	German
Moise, Clarice Sara,	San Francisco,	French
Moise, Hazel Irene,	San Francisco,	Latin
Molfino, Albert Andrew,	Jackson,	Law
Monahan, John,	Savannah, Ga.,	Civil Eng.
A. B., University of Georgia, 1903.		
Montague, Lilian Anna,	Los Angeles,	French
Monteith, Minerva,	Paso Robles,	Physics
Montferrand, Alpiniano,	Orizaba, Mex.,	Mech. Eng.
Montgomery, Carl Lacy,	Tulare,	Botany
Montgomery, Chester Arthur,	Palo Alto,	Elec. Eng.
Montgomery, Orland F.,	Tulare,	Law
Moore, David Johnson,	New Wilmington, Pa.,	Law
Moore, Edith Harriet,	Altadena,	German
Moore, Kirk Tonner,	Tucson, Ariz.,	Law

Moore, Mary Adaline,	Pasadena,	German
Moore, Raymond Howard,	Boise, Idaho,	Law
Moorhead, James Barbour,	Los Angeles,	Mech. Eng.
Moran, Robert Breck,	Palo Alto,	Geology
Morehouse, Arthur Winfield,	Palo Alto,	Mech. Eng.
Morehouse, William Frank,	Palo Alto,	Chemistry
Morell, George Fowler,	Palo Alto,	Law
Morgan, Geoffrey Francis,	Los Angeles,	English
Morgan, Jeannette C.,	San Diego,	German
Morgan, Octavius Weller,	Los Angeles,	Civil Eng.
Morgan, Richard Sumner,	San Francisco,	Law
Moriarty, Maurice Vincent,	Los Angeles,	Education

A. B., St. Vincent's College, 1903, A. M., 1904.

Morin, Wm. James,	Stanford Univ.,	Rom. Lang.
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A. B., Stanford, 1906.

Moroney, Carl Joseph,	Pueblo, Colo.,	Mech. Eng.
Morris, Charles Shoemaker,	Pasadena,	Botany
Morris, Myrl,	San Francisco,	German
Morris, Robert Farley,	Palo Alto,	Elec. Eng.
Morris, Ruth Eyer,	Los Angeles,	English
Morrison, Clara Louise,	Lewiston, Idaho,	French
Morrow, Ben Stogden,	Portland, Ore.,	Civil Eng.
Morse, Blanche Bertine,	Dillon, Mont.,	English
Morton, Ivan,	Palo Alto,	Mech. Eng.
Moser, Charles,	Mt. Healthy, Ohio,	Civil Eng.
Moser, Stuart,	Mt. Healthy, Ohio,	Civil Eng.
Motomura, Seizo,	San Francisco,	Elec. Eng.
Mott, Albert Gifford,	Lawrence,	Elec. Eng.
Mott, James Wheaton,	Salem, Ore.,	English
Motz, Arthur Frank,	Palo Alto,	Law
Motz, Ralph Leslie,	Palo Alto,	Geol. & Mining
Moulton, Dudley,	Palo Alto,	Entomology

A. B., Stanford, 1903.

Moulton, Lina,	Palo Alto,	German
Moulton, Stillman Moses,	Palo Alto,	Entomology Sp.
Mues, Merle Brownie,	Palo Alto,	Latin
Mugler, Frederick Rolla,	Merced,	Physiology
Mullin, Georgia,	Cedar Rapids, Iowa,	German
Mumaw, J. Parke,	Scottsdale, Pa.,	Civil Eng.
Munger, Arthur Lee, Jr.,	Palo Alto,	Physiology
Murdock, Effie Lisle,	Salt Lake City, Utah,	Latin



Murgotten, Francis Clark,	San José,	Greek
A. B., Stanford, 1901.		
Murphy, Arthur Alban,	Portland, Ore.,	Law
Murphy, Winnifred Catherine,	Tacoma, Wash.,	Botany
Myers, Harvey Hallam,	Hemet,	Civil Eng.
Myers, James Walter,	Portland, Ore.,	Education
Myers, Robert Folsom,	Bakersfield,	Elec. Eng.
Naftzger, Roy Edgar,	San Francisco,	Economics
Nagel, Alice Emine,	Davenport, Iowa,	Mathematics
Nakayama, Fumiya,	Kyoto, Japan,	Mech. Eng.
Nakayama, Kiichi,	Shinano, Japan,	Economics Sp.
Nash, Edward Jay,	Palo Alto,	Elec. Eng.
Nash, Howard Frank,	Palo Alto,	Elec. Eng.
Naylor, Charles Elwood, Jr.,	San Francisco,	Law
Neill, Minnesota Florence,	Palo Alto,	German
Nelson, Ernest Bruce,	San José,	History
Nelson, Ethel Blanda,	Tacoma, Wash.,	English
Nelson, Ina May,	Lake Valley, N. M.,	Chemistry
Nelson, Nels Berdenicus,	Waterman, Ill.,	Law Sp.
Newberg, Lucille J.,	San Bernardino,	History
Newcomb, Mary Alice,	Palo Alto,	English
Ph. B., University of the Pacific, 1889.		
Newcomer, Robert Hitt,	Mt. Morris, Ill.,	Economics
A. B., Stanford, 1906.		
Newland, Lloyd,	Palo Alto,	Law
Newlin, Myrtle Alverson,	Fresno,	Latin
Newman, Fred Conrad,	Dyerville,	Civil Eng.
Newman, James Vincent,	Woodside,	Civil Eng.
Neymann, Clarence Adolph,	Pasadena,	Physiology
Nibley, Joel,	Logan, Utah,	Law Sp.
Nims, Charles Brewster,	Muskegon, Mich.,	Geol. & Min.
Nisson, Eric August,	Petaluma,	Chemistry Sp.
Nohara, Shigeroku,	Kyoto, Japan,	Botany
Nordhoff, Charles Bernard,	Redlands,	Economics
Nordman, Berthold,	San Francisco,	Elec. Eng.
North, W. Cuyler,	Cupertino,	Elec. Eng.
Norton, Ione May,	Rialto,	Latin
Norvell, Louise,	Merced,	History
Norwood, Clifford Taylor,	Redlands,	Mechanical Eng.
Nye, Frank Charles,	Riverside,	Economics
O'Brien, Mabel Genevieve,	Merced,	History
Odanaka, Oliver Eiichi,	San Francisco,	History

Officer, Elizabeth Logan,	Salt Lake City, Utah,	English
Ogden, Benjamin Franklin,	Moline, Ill.,	Geol. and Min.
Ogier, Margaret,	San José,	Zoology
Ogier, Walter Tullidge,	San José,	Mechanical Eng.
Oliver, Frank William, Jr.,	Wichita, Kan.,	German
Olsson-Seffer, Runar Ivar,	Fruitvale,	Botany <i>Sp.</i>
Oltmans, Jacob,	Melvin, Ill.,	German
O'Neale, Lila Morris,	San José,	English
O'Neill, Helen Howard,	San José,	English
Oppenheim, Morris,	San Francisco,	Law
A. B., Stanford, 1905.		
Orcutt, Mary Eva,	Santa Paula,	Latin
A. B., University of California, 1902; A. M., Stanford, 1905.		
Osborn, Mabelle Frances,	Palo Alto,	French
Osborne, Edith Helen,	Los Angeles,	Drawing
Osborne, Raymond Gaylord,	Los Angeles,	Mining Eng.
Osgood, Charles Sumner,	San José,	English
Osgood, Hattibel Harker,	San José,	English
Osgood, Marion,	San José,	English
Ostroski, Herbert Merton,	San Francisco,	Law
Otto, Lucile Elizabeth,	Belmont,	German
Owen, Chauncey Carroll,	Pasadena,	Law
Owen, Elise Dorrance,	Stockton,	History
Packard, Ashley Burdett,	Naco, Ariz.,	Law
Paine, Charles Treat,	Redlands,	Entomology
Paine, William Craig,	Redlands,	Elec. Eng.
Palmer, Frederick Robie,	San José,	Law
Palmer, Jessie Bowen,	Palo Alto,	German <i>Sp.</i>
Palmer, Walter Curtis,	Stockbridge, Mass.,	Zoology
A. B., Williams College, 1903.		
Park, Alma Lyman,	Redlands,	English <i>Sp.</i>
Park, Charles V.,	Kidder, Mo.,	English
Park, Hugh, Jr.,	San José,	Geology
Parma, John,	Santa Barbara,	Civil Eng.
Parry, Julius Robert,	Reno, Nev.,	Geol. and Mining
Parton, Floyd,	San José,	Economics
Patterson, Ella Jane,	Long Beach,	History
Patterson, Hazel Moore,	Los Angeles,	English
A. B., Stanford, 1906.		
Patterson, James Druillard,	Reno, Nev.,	Civil Eng.
Patterson, Mabel,	San José,	Botany

Patterson, Mima Florence,	Los Angeles,	Latin
Patterson, Rose W.,	San José,	Entomology
Paxton, Charles Hugh,	Orange,	Mech. Eng. <i>Sp.</i>
Paxton, William Arthur,	Orange,	Drawing
Pearce, Ellen Rose,	Hilo, H. I.,	Latin
Pearce, Louise,	Los Angeles,	Physiology
Pearsall, Eva,	Tacoma, Wash.,	Latin
Peaslee, W. Dhu Aine,	Emigrant Gap,	Electrical Eng.
Peck, Clair Leverett,	Indianapolis, Ind.,	Mech. Eng.

B. S., Purdue University, 1904.

Pedlar, Calla Claire,	San Francisco,	English
Pedlar, Mary Hazel,	San Francisco,	English
Peirce, Edith Alice,	Mesa Grande,	Zoology
Pemberton, John Rothwell,	San Francisco,	Civil Eng.
Pepper, Helen Neville,	Los Angeles,	Latin
Perkins, Brigham Andrew,	Salt Lake City, Utah,	Physics
Perkins, Clover,	Bakersfield,	Economics
Perkins, Ruth Coburn,	Los Angeles,	History
Perrin, Arch,	San José,	History
Peters, Herman,	Santa Cruz,	German
Peterson, Clarence Jennings,	Honolulu, T. H.,	Geol. & Mining
Peterson, Elsa,	Honolulu, T. H.,	English
Pettingill, Tallahatchie,	Redlands,	History
Peyton, Robert Clark,	Los Angeles,	Law
Phelps, John Dudley,	San Francisco,	Chemistry
Philippi, Beatrice Genevieve,	Los Angeles,	English
Phillips, Charles,	Palo Alto,	German

J. D., Univ. of Tübingen, 1902.

Pickering, Loring C. F.,	San Francisco,	Law
Pickett, Harry Elliott,	Oakland,	Law
Pieper, James Frederick,	Palo Alto,	Civil Eng.
Pier, Earl Harriman,	Santa Clara,	Law
Pierce, Charles Roy,	Palo Alto,	Law <i>Sp.</i>
Pierce, Mildred Thurston,	San José,	English
Pierce, Samuel Hatch,	Palo Alto,	Law <i>Sp.</i>
Pierce, William John,	Auburn, N. Y.,	Chemistry
Pinkham, Alice June,	San José,	Greek

A. B., Colby College, 1903.

Piper, Merle Bentley,	San José,	Civil Eng.
Pitman, Georgia Denne,	Palo Alto,	Zoology

A. B., Stanford, 1906.

Plagemann, Robert D.,	San Francisco,	Economics
Plaskett, Frank Waldo,	Salinas,	Mechanical Eng.
Plummer, Gertrude May,	Rocklin,	Mathematics
Poage, Johanna Lelia,	Azusa,	Mathematics
Poage, Leland Starke,	Azusa,	Economics
Politzer, Jerome Maximilian,	Alameda,	Law
Pollock, Ralph Carleton,	Greeley, Colo.,	Chemistry
Polson, Anna,	San José,	History
Poor, Herbert Emery,	Palo Alto,	Chemical Eng.
Porter, Arthur M.,	Berkeley,	Civil Eng.
Post, Edwin Rudd,	Moulton, Ia.,	Economics
Post, Fred Dan,	Rockford, Ill.,	Chem. Eng.
Post, Margaret,	Palo Alto,	English
Pratt, James Hamilton,	Honolulu, T. H.,	Civil Eng.
Pratt, Robert Risdon,	San Francisco,	Mech. Eng.
Preciado, Abram A.,	Madera,	Law
Preisker, Ernest Charles,	San José,	Economics
Prescott, Basil,	San Diego,	Geol. and Min.
Presley, George Joseph,	San Francisco,	Law
Prevost, Charles Austin,	San José,	Economics Sp.
Price, Berdella,	Soquel,	Latin
Price, Harry Lawrence,	San Diego,	Law
Price, Jacob Meday,	Palo Alto,	Chem. Eng.
Proctor, Asa Glisson,	Woodland,	Civil Eng.
Proctor, James Norris,	Ventura,	Zoology
Pruett, John Floyd,	Fallbrook,	Physiology
Pugh, Doris,	Redwood City,	English
Pugh, Harriet Holmes,	Redwood City,	History
Quello, Anton,	Alexandria, Minn.,	Botany
Quertermous, Roy Crawford,	Santa Cruz,	Civil Eng. Sp.
Ramsay, Grace Louise,	Los Angeles,	History
Ramsay, Lilian,	Palo Alto,	Entomology
Ramsay, Reginald Crawford,	Palo Alto,	Geol. & Min.
Randall, Charles Alfred,	Richmond,	Mining Eng. Sp.
Randall, Josephine Louise D.,	Stanford University,	Zoology
Randall, William Ramsey D.,	Stanford Univ.,	Physiology
Ransom, Frederic Garfield,	Lancaster, N. Y.,	Chemistry
Ranum, Arthur,	Palo Alto,	Mathematics
A. B., University of Minnesota, 1892.		
Rattray, Robert Allen,	Des Moines, Ia.,	Law
Rawles, Wesley Mock,	Boonville,	Geol. and Min.

Ray, James Chandler,	Stanford Univ.,	Geol. and Min.
Raymond, Claudius H.,	Los Angeles,	Economics
Rea, Bernard Johnson,	Palo Alto,	History
Read, William,	Lancaster, Pa.,	Civil Eng. <i>Sp.</i>
Redman, Frank M.,	Fargo, N. D.,	Elec. Eng.
Reed, Haines Wadsworth,	Los Angeles,	Economics
Reed, Inez Whitmore,	Junction City,	Mathematics
Reeves, Edna Mary,	Ukiah,	Zoology
A. B., Stanford, 1906.		
Reilly, John Franklin,	Portland, Ore.,	Law
Reinhart, Anna,	Olympia, Wash.,	Drawing
A. B., Stanford, 1906.		
Reining, Charles,	Palo Alto,	German <i>Sp.</i>
Reyburn, Emory Everett,	Fresno,	Electrical Eng. <i>Sp.</i>
Reyburn, Glenn William,	Fresno,	Physiology <i>Sp.</i>
Rhyne, Homer, .	Paso Robles,	Geol. and Min.
Rice, Edward Waldo,	Stanford Univ.,	Chemistry <i>Sp.</i>
Rice, Warren Sumner,	Edenvale,	Geol. and Mining
Richards, Dexter Newell,	Gridley,	Physiology
Richards, John Percy,	San José,	Chemistry
Richardson, Eri Homer,	Denver, Colo.,	Botany
Richardson, Girard Nye,	Oakland,	Law
Richardson, Walter Hamilton,	Santa Barbara,	Civil Eng.
Richmond, Ruth,	Claremont,	Zoology
Riddell, George William, Jr.,	Brazil, Ind.,	English
Riddell, Harry Starr,	Coronado Beach,	Drawing
Riddell, John Henry,	Brazil, Ind.,	Civil Eng.
Rider, Kathrine May,	Los Angeles,	English
Riebsam, Henrietta E.,	San José,	Education
Ritchie, William,	Fields Landing,	Law
Rittenhouse, Emmet Cloyd,	Santa Cruz,	Law
A. B., Stanford, 1904.		
Rixford, Halsey Luther,	San Francisco,	English
Roberts, Charles Royden,	San Diego,	Philosophy
Roberts, Ruberta Augusta,	San José,	Zoology
Robertson, Edna . Ruth,	Redwood City,	History
Robertson, Frank Alexander,	Grand Forks, N. D.,	Law
Robertson, Harry,	Redwood City,	Mech. Eng.
Robertson, John A.,	Kearney, Neb.,	Civil Eng.
Robertson, William Ardis,	Los Angeles,	Law

Robinson, Edith Emma,	Salinas,	Latin
Robinson, Lucy Adeline,	Los Angeles,	Mathematics
Robinson, Philip Archibald,	Benicia,	Electrical Eng.
Robinson, Sarah Alice,	Oakland,	Drawing
Robinson, Thomas Edgar,	Stanford Univ.,	Law <i>Sp.</i>
Robotham, Edna May,	Redlands,	French
Rockey, Eugene Watson,	Portland, Ore.,	German
Roedel, Alice Louise,	San Mateo,	Latin
Roehr, Frank,	San José,	Law

## A. B., Stanford, 1904.

Roesner, Gwendolen,	Kent,	English
Rogers, Edwin Allan,	Palo Alto,	Mech. Eng.
Rogers, Herbert Thomas,	San José,	Electrical Eng.
Rogers, Thomas Farwell,	San José,	Civil Eng.
Roller, Jennie Josephine,	Palo Alto,	Drawing
Ronzone, Silvio Espy,	Redlands,	Chemistry
Rook, Ross Henry,	Youngstown, Ohio,	Geol. & Min.
Roop, Wendell Prescott,	Oakland,	Physics
Rose, Jessie Perkins,	Palo Alto,	Physiology
Rosenberg, Albert H.,	San Francisco,	Elec. Eng.
Rosenberg, Leo M.,	San Francisco,	Mining Eng.
Rosenfeld, Arthur,	Portland, Ore.,	Physiology
Rosenfeld, James Wendal,	Portland, Ore.,	Physiology
Rosenthal, Phyllis Hana,	San José,	English
Ross, Carl Thorburn,	Astoria, Ore.,	Physiology
Ross, Harry Scott,	Pasadena,	Chemistry
Ross, Lee Thornton,	Belmont,	History
Ross, Perley Ason,	Fallbrook,	Physics
Ross, Samuel Boyd,	Dubois, Pa.,	Physiology
Rossiter, Ernest,	Palo Alto,	Elec. Eng.
Roth, Almon Edward,	Willits,	Law
Roush, Clara Louise,	Redlands,	English
Rousseau, William H. H.,	Mayfield,	Law <i>Sp.</i>
Rowe, Ethel Elizabeth,	Putnam, Conn.,	German
Ruggles, Howard Edwin,	Ross,	Physiology
Rule, Orville Rey,	Los Angeles,	Law
Rundell, Harry H.,	Palo Alto,	Mechanical Eng.
Russell, Henrietta Elizabeth,	Tulare,	Latin
Russell, Lawrence Greenleaf,	San Francisco,	Mech. Eng. <i>Sp.</i>
Rust, Everett Winder,	Pasadena,	Botany
Rutherford, Dorsey J.,	Pomona,	Civil Eng.

St. John, Milton Hiram,	Mountain View,	History <i>Sp.</i>
Sales, Dudley Daniel,	Denver, Colo.,	Law
Salisbury, Stuart McFarland,	Los Angeles,	Law
Sampson, Carlos Eugene,	Stockton,	Electrical Eng.
Samuel, Ford Edwards,	Alameda,	English
Sanborn, Clarence Charles,	Tilton, N. H.,	Economics
Sandoe, Fannie Bruner,	Marshalltown, Ia.,	Drawing
Sanger, Walter Max,	Los Angeles,	Civil Eng. <i>Sp.</i>
Sankey, Stella Belle,	Palo Alto,	Drawing <i>Sp.</i>
Sargent, Agnes Ruth,	Whittier,	Latin
A. B., Whittier College, 1905.		
Saunders, Benjamin Rankin,	Redwood City,	Geol. & Min.
Savage, Henry Ennis,	Salem, Ore.,	Chemistry
A. B., Stanford, 1906.		
Savage, Harry King,	Stanford Univ.,	Civil Eng. <i>Sp.</i>
Sawyer, Ernest Walker,	Stanford Univ.,	Civil Eng.
Schaaf, Daniel Louis,	San José,	Electrical Eng.
Schauer, Fred Hayes,	Santa Barbara,	Law
B. S., Occidental College, 1903.		
Schaupp, Ernest G.,	Santa Rosa,	German
Schlessinger, Arthur C.,	San Francisco,	Physics
Schmueser, Charles Henry,	San Francisco,	Law
Schnack, Ferdinand John Henry,	Honolulu, T. H.,	Law
Schneider, Florence Margaret,	Palo Alto,	Botany
Schuele, George Edward,	Vancouver, Wn.,	Electrical Eng.
Schultzberg, George,	San José,	Geol. and Min.
Schwabacher, Albert Erle,	San Francisco,	Economics
Schwabacher, Samuel Isaac,	San Francisco,	Chemistry
Schwennesen, Alvin Theodore,	Clayton,	Geol. and Min.
Scott, Joseph Alfred,	Bellingham, Wn.,	Economics <i>Sp.</i>
Scull, Carrie Beatrice,	Santa Barbara,	English
Seadler, Ruth Estelle,	San Francisco,	Economics
A. B., Stanford, 1906.		
Seargeant, James Everett,	Los Angeles,	Law
Seargeant, Lawrence Herring,	Pasadena,	Mech. Eng.
A. B., Stanford, 1906.		
Searles, William Leslie,	Auburn, N. Y.,	Civil Eng.
Sears, John Ernest,	San José,	Mathematics <i>Sp.</i>
Seibert, Donald Kingsland,	San Francisco,	Law
A. B., Stanford, 1905.		
Sellers, Walter Ray,	Palo Alto,	Civil Eng.
Severy, Clarence Luther,	Pasadena,	Geol. and Min.

Severy, Hazel Wood,	Pasadena,	Chemistry
Sevier, Florence M.,	Eureka,	Latin
Sexton, Ralph Ernest,	Enid, Okla.,	Civil Eng.
Seybolt, Marion Leigh,	Oakland,	English
Sferlazzo, Carlo,	Mayfield,	Law Sp.
Shafer, George Daniel,	Muncie, Ind.,	Entomology
A. B., Indiana University, 1900.		
Shaner, George Franklin,	Los Gatos,	Law
Shearer, William McConnell,	San José,	Chemistry
Sheehy, John Joseph,	San Rafael,	Economics
Sheibley, Edward Gwyn,	Tiffin, Ohio,	Civil Eng.
Shelton, William Cortez,	San José,	Law
Sherman, Edward Masters,	Montrose, Colo.,	Law
Sherrard, Evelyn Richmond,	Alameda,	Mathematics
Sherriffs, Alexander,	San José,	Law
Shibamiya, Yasohiko,	Tokyo, Japan,	English
Shidler, Bertha Leonard,	York, Neb.,	French
Shiflett, George Kephart,	Selma,	English
Shinn, Alice Eleanor,	Oakland,	English
Show, Stuart Bevier,	Palo Alto,	Economics
Shutt, Nathan Emery,	Santa Monica,	Chemistry
Shutts, Arthur Burton,	Palo Alto,	Geol. and Min.
Shutts, Fred Ordway,	Los Angeles,	Civil Eng.
Sidwell, Wilson,	Springville, Ia.,	Law
Sieber, Elsie Marie,	Woodland,	German
Silent, Chester,	Los Angeles,	Law
Simon, Elizabeth,	Santa Rosa,	German
Simpson, Emma Louise,	Oakland,	German
Simpson, Walter Irving,	Mayfield,	Education
Sinclair, Myra Anna,	Palo Alto,	Latin
Sindo, Michitaro,	Stanford Univ.,	Physiology
Singletary, Emory Grigsby,	San José,	Civil Eng.
Singletary, George Curtis,	San José,	Civil Eng.
Sinnock, Frank Brown,	Quincy, Ill.,	Civil Eng.
Sirdevan, William Henry,	Olean, N. Y.,	Geol. and Min.
Skahen, Vance Edward,	San Mateo,	Law Sp.
Sloan, Frank Curry,	Palo Alto,	Greek
Slusher, Dale,	Pendleton, Ore.,	Geol. and Min.
Slye, Ralph,	Menlo Park,	Chemistry
Smiley, Elsie Mayrene,	Watsonville,	English
Smith, Avis Katharine,	San Luis Obispo,	Greek



Smith, Charles Piper,	Indianapolis, Ind.,	Zoology
B. S., Purdue University, 1903.		
Smith, Daniel Drake,	Ocean Park,	Civil Eng.
Smith, Edgar C.,	Pocatello, Idaho,	Civil Eng.
Smith, Egbert Alling,	Napa,	Law
Smith, Ernest Nathaniel,	Honolulu, T. H.,	Law
Smith, Francis Marshall,	San Francisco,	Civil Eng. <i>Sp.</i>
Smith, Gertrude Mary,	Campbell,	Greek
A. B., Stanford, 1904.		
Smith, Grover Cleveland,	Colton,	Drawing
Smith, Harold Fred,	Campbell,	History
Smith, Jesse Winter,	Salt Lake City, Utah,	Civil Eng.
Smith, Lilian Rebecca,	Campbell,	German
A. B., Iowa College, 1900.		
Smith, Margaret Butterfield,	Cripple Creek, Colo.,	Latin
Smith, Mildred,	Redwood City,	Spanish
Smith, Putnam Busk,	Ferndale,	Law
Smith, Reba,	Los Angeles,	French
Smith, Richard Garbett,	Los Angeles,	Geology
Smith, Stuart Sawyer,	Campbell,	Economics
Smyser, Samuel Porter,	Los Angeles,	Economics
Smyth, Charles Frederick,	Wichita, Kan.,	Law
Snyder, Edwin Reagan,	San José,	Education
A. B., Stanford, 1906.		
Soo-Hoo, Peter,	San Francisco,	Elec. Eng.
Soper, Edward Kirke,	Palo Alto,	Geol. and Min.
Souther, Lucy Abbott,	Springfield, Ill.,	English
Sowles, Lewis William,	Salt Lake City, Utah,	Elec. Eng.
Spalding, Jane McCormick,	Los Angeles,	English
Spalding, William Dennison,	Los Angeles,	Civil Eng. <i>Sp.</i>
Spangler, Colin Irving,	Palo Alto,	English
Spaulding, Charles Edgar,	Phoenix, Ariz.,	Elec. Eng.
Spaulding, Milo Herrick,	Palo Alto,	Zoology
A. B., Stanford, 1903.		
Spencer, Alice Day,	Palo Alto,	Zoology
Spencer, Esther Jean,	Los Angeles,	Latin
Sprague, Helen Louise,	Sacramento,	Economics
Spurrier, George Otis,	Paso Robles,	Economics
Squire, Frank Carter,	Claremont,	Civil Eng.
Squire, Mary Louise,	Visalia,	Physiology
Stadtmüller, Ellen Smith,	San Francisco,	Physiology
Stafford, Grace Estelle,	Eureka,	History

Stafford, Harry I.,	San Francisco,	Law
Stager, Cora Elizabeth,	Palo Alto,	German
Stager, Henry Walter,	Palo Alto,	Mathematics
A. B., Stanford, 1902.		
Stagner, Charles Elmer,	Wheatland,	Physiology
Stallcup, Evan Shelby,	Tacoma, Wash.,	Law
Stallcup, Margery Bruen,	Tacoma, Wash.,	Law
Stanford, James Nichols,	Olympia, Wash.,	English
Stanley, Leo Leonidas,	San Miguel,	Physiology
Stanley, Owen Garrett,	Ukiah,	Civil Eng.
Stark, William Harvey,	Louisiana, Mo.,	German
Starnes, Xaver Brand,	Asheville, N. C.,	Geol. & Min.
Stearns, Myron Morris,	Hartford, Conn.,	Law
Steel, Donald,	Brownsville,	Geol. and Min.
Steele, George,	Los Angeles,	Elec. Eng.
Steele, Viola Alice,	Los Angeles,	English
Steinbeck, Charles Earl,	Stockton,	Mech. Eng.
Steinberger, Arthur Adolph,	San Francisco,	Law
Sterling, Edward Canfield,	Redlands,	Economics
Sterne, Ruth Grace,	San Diego,	German
Stevens, Archie McDonald,	Palo Alto,	Mech. Eng.
Stevens, Esther Stuart,	Berkeley,	English
Stevenson, Cornelia,	Seattle, Wash.,	German
Stewart, John Elmer,	Parkville, Mo.,	Law
Stewart, Milton Sheldon,	Santa Barbara,	Geol. and Min.
Stewart, Paul,	Los Angeles,	Law
Stewart, Spurgeon Downville,	Williston, N. D.,	Law
Ph. B., Hamline University, 1905.		
Stewart, William Abner,	Georgetown, Colo.,	Physics
Stillman, Edgar,	San Francisco,	German
Stillson, Harriet Alice,	Palo Alto,	German
Stinson, Sylvia Della,	Palo Alto,	German
Stokes, Ora,	Pasadena,	Mathematics
Stolle, Helen,	Oakland,	German
Stolz, Herbert Rowell,	Redlands,	Economics
Stolz, Mary Rosalie,	Redlands,	English
A. B., Stanford, 1906.		
Stott, Edmund Plowden,	Portland, Ore.,	Law
Stover, Roy Bales,	San Diego,	Law
Stowe, Herbert Arthur,	Stockton,	Economics
Strauss, Mervyn Frank,	San Francisco,	Elec. Eng.
Street, Horace Marvin,	Sonora,	Law

Streeter, Olive Louisa,	Cupertino,	History
Streeter, Richard Summers,	Cupertino,	Civil Eng.
Strickland, Geraldine Belle,	San Francisco,	Physiology
Strong, Charles Arthur,	Portland, Ore.,	Civil Eng.
Strong, Harold William,	Corvallis, Ore.,	Law
Stroud, Genevieve,	Alhambra,	English
Strout, Gale Stanley,	Sebastopol,	Civil Eng.
Strunsky, Rose,	San Francisco,	History
Stuntz, William Oliver,	Palo Alto,	Botany
Sturgiss, Lillian Gardner,	Chicago, Ill.,	English
Suits, Charlotte Belle,	Palo Alto,	English
Suits, Clarence Leroy,	Palo Alto,	Chemistry
Sullivan, Elizabeth Teresa,	Hollywood,	Education
Sullivan, Florance Francis,	Oregon City, Ore.,	Chemistry
Sumner, Walter Augustus,	Denver, Colo.,	Law
Suzuki, Shinkichi,	Tokio, Japan,	Chemistry
Gr., Sapporo Agricultural College.		
Swan, Frederick H.,	Pasadena,	Law Sp.
Swart, Frank,	New Paris, Ind.,	Law
Swartz, Neva Retha,	Chicago, Ill.,	English
Swayne, Warren Hasting,	Alameda,	Law
Swickard, James Blaine,	Edenvale,	Civil Eng.
Swift, Ernest John,	Santa Cruz,	Law Sp.
Swift, May Viola,	Montecito,	Mathematics
Swift, Ruth,	Santa Cruz,	German
Swift, Vega,	Santa Cruz,	English
Swinerton, Alfred Bingham,	San Francisco,	Geology
Symonds, Bessie Marjorie,	San José,	Physiology
Taber, Stephen,	Richmond, Va.,	Min. Eng.
Tafel, Ernest Ara,	Palo Alto,	Law Sp.
Taft, Harris Welch,	Santa Monica,	Law
Taft, Muriel Charlena,	Santa Monica,	English
Taggart, Arthur Fay,	Palo Alto,	Geol. & Mining
Taggart, James Deacon,	Santa Barbara,	Elec. Eng.
Talavera, Francisco,	Orizaba, Mexico,	Elec. Eng.
Talboy, Archibald Carlisle,	Mapleton, Ia.,	Law Sp.
Talboy, Frederick Richard,	Palo Alto,	Law Sp.
Tallant, Edward Percy,	Santa Barbara,	Elec. Eng.
Taniyama, Sadakichi,	Okayama, Japan,	Geol. & Min.
Tarbell, George Armstrong,	Cumberland, B. C.,	Elec. Eng. Sp.
Taverner, Clara Louise,	San Francisco,	English

Taylor, Alfred Loomis,	Irwin, Pa.,	Chemistry
Taylor, Charles Bertrand,	Fort Wayne, Ind.,	Civil Eng.
Taylor, Charles Marvin,	Menlo Park,	Elec. Eng.
Taylor, Nain,	San Diego,	English
Tays, James Anthony,	Ontario,	Chemistry
Teel, Claude Cameron,	Bishop,	Geol. & Min.
Telfer, William Jack,	San José,	Law
Terrill, Chester Charles,	San Francisco,	Civil Eng.
Terry, Alexander Augustus,	Lisbon, Portugal,	Elec. Eng.
Thayer, Jessie Shirlaw,	San Francisco,	Latin
Thayer, Mabel Rozella,	Mayfield,	Mathematics
Theile, William Christian,	Stanford Univ.,	Law
Thiriôt, George Milton,	Santa Clara,	English
A. B., Stanford, 1905.		
Thoburn, Helen,	Palo Alto,	German
Thomas, Edward Yocom,	Palo Alto,	Geol. & Mining
Thomas, Frank Holman,	Ukiah,	Geol. and Min.
Thomas, Frank Serpas,	Fresno,	Elec. Eng. <i>Sp.</i>
Thomas, Halbert Ray,	Los Angeles,	Elec. Eng.
Thomas, Henrietta Gilstrap,	Woodland,	Greek
Thomas, Iva,	San José,	Latin
Thomas, Micajah Anderson, Jr.,	Ukiah,	Law
A. B., Stanford, 1904.		
Thompson, Alex. McKnight,	Seattle, Wash.,	Law
Thompson, Elizabeth,	Palo Alto,	Rom. Lang.
Thompson, Estelle,	San José,	Drawing
Thompson, James Cooper,	Santa Barbara,	Chemistry
Thompson, John Hamer,	San José,	Entomology
Thompson, John Ibbotson,	Pueblo, Colo.,	Mech. Eng.
Thompson, Robert A.,	Palo Alto,	Education
A. B., Stanford, 1905.		
Thompson, Seth Blaine,	Butte, Mont.,	Law
Thomson, Hugh Leslie,	Burlington, Vt.,	Chemistry
Thomson, Jessie Giffen,	Stanford Univ.,	German
Thornely, Genevieve Helen,	Tacoma, Wash.,	English
Thornton, John Ray,	Palo Alto,	Civil Eng.
Thorpe, Charles Alfred,	Ioamosa,	Law
Thurston, Earl Perkins,	San Francisco,	English <i>Sp.</i>
Tilton, Frederic LeRoy,	Colorado Springs, Colo.,	Law
Timmons, Myrtle Leonore,	Santa Ana,	English
Titus, Charles Mantor,	Freestone,	Mathematics
A. B., Stanford, 1904.		

Todd, Clarence E.,	Menlo Park,	French
A. B., Fairmount College, 1904.		
Todd, Rose Sophia,	Gardnerville, Nev.,	Latin
Todd, Ward Waldo,	Santa Barbara,	Chemistry
Tolhurst, Louis Hodgman,	Los Angeles,	Chemistry
Toll, Asahel Clark,	Palo Alto,	Civil Eng.
Tomasini, Almo,	Palo Alto,	Civil Eng.
Tomoye, Risaburo,	Niigata, Japan,	Economics
Toothaker, Alva Ray,	Palo Alto,	Philosophy
A. B., Morningside College, 1903.		
Toothaker, Lucia Mae,	Palo Alto,	English
A. B., Cornell College, 1904.		
Topp, Roger,	Stanford Univ.,	Mech. Eng.
Torney, Francis Joseph,	San Francisco,	Mech. Eng.
Tower, Isaac Russ,	Marshfield, Ore.,	Law
Tower, Mary Sherburne,	San José,	German
Towne, Dwight Fox,	San Bernardino,	Chemistry
Trantum, Charles Perkins,	Los Angeles,	Law
Trent, Walter Edwin,	San Francisco,	Geol. & Min. Sp.
Tucker, William Henry,	San José,	Law
Tully, John,	San José,	English
Tupper, James Tullius,	Fresno,	Law
Turner, Frank Warren,	Stanford Univ.	Geol. & Min. Sp.
Turner, Maude Elizabeth,	Talmage,	Latin
Turner, Waldo Egerton,	Palo Alto,	Law
Tuttle, John Raymond,	Sacramento,	History
Twohy, Mary Genevieve,	San José,	History
Twombly, Harriet Elizabeth,	Palo Alto,	Physiology
Tyler, Willard Thurston,	Palo Alto,	Elec. Eng.
Tyng, Francis Carrillo,	Victoria, Tex.,	Geol. & Min. Sp.
Ulrich, Ferdinand Emil,	Palo Alto;	Law Sp.
Ulrici, Walter Ernest,	San José,	Education
Urion, Frances Mary,	Chicago, Ill.,	English
Vail, Alida,	San Francisco,	History
Vail, Stanley Marshall,	San Francisco,	Economics
Valentine, Percy Friars,	Sacramento,	Law
Vallely, Eleanor Clare,	Los Angeles,	Mathematics
Vanderhoff, Bertrand G.,	Phelps, N. Y.,	Geol. & Min.
Vandervoort, Theodore, Jr.,	Palo Alto,	Geol. & Min.
Van Epps, Carolyn Mae,	Palo Alto,	German
Van Etten, Percy Hixon,	Dover, N. J.,	Mech. Eng.

Van Velzer, Roy Ward,	Fallbrook,	Mathematics
Vertrees, Clarence E.,	San Jacinto,	Mech. Eng.
Vestal, Maxwell,	San José,	Elec. Eng.
Vickers, Clara,	Los Angeles,	German
Villegas, D. George Andrew,	Santiago de Chile,	Civil Eng.
Voss, Maxwell Hughes,	Palo Alto,	Elec. Eng.
Wagner, Adela Beatrice,	Ventura,	History
Wakeman, Earl Seeley,	Campbell,	English
Wakimato, Matojiro,	Tokio, Japan,	Economics
Gr., Waseda University, 1900.		
Walbridge, Lester Sinclair,	Los Angeles,	Greek
Walker, David Henry, Jr.,	San Francisco,	Mech. Eng.
Walker, Ralph Henry,	Visalia,	Law
Walker, Richard Washington,	Glen Moore, Pa.,	Education
C. E., Lehigh University, 1884.		
Walker, William Moore,	Los Angeles,	Law
Wallace, Ethel,	Visalia,	History
Wallace, Guy,	Redlands,	Chemistry
Ward, John McCartney,	San Diego,	Law
Ward, Lou Johnstone,	Los Angeles,	English
Ward, Milola Joy,	Portland, Oregon,	Botany
Ward, Wendell William,	Los Angeles,	History
Warmoth, Lenna Jane,	Berkeley,	Mathematics
Warren, Edwin Vincent,	Pacific Grove,	English Sp.
Warrior, Mabel,	Palo Alto,	German
Wassman, Max, Jr.,	San José,	Law
Watanabe, Teiichiro,	Tokyo, Japan,	Civil Eng.
Wathey, Ralph Lockwood,	Palo Alto,	Economics
Watkins, Mary Martha,	Palo Alto,	German
Watkins, Victor Thomas,	Los Angeles,	Law Sp.
Watson, Arabella Grace,	Chicago, Ill.,	History
Watson, Paul Robert,	San Diego,	Civil Eng.
Watson, Ralph Angelo,	Champaign, Ill.,	Law Sp.
Watters, Ethel Madelaine,	Santa Cruz,	Physiology
Waugh, Clarence Wendell,	Brooklyn, N. Y.,	Physiology
Weaver, Elmer Rupel,	Glendora,	Chem. Eng.
Weaver, Emma Angeline,	San José,	English
Weaver, Gertrude Benjamin,	Palo Alto,	Psychology
Webber, Burpee Oglivee,	Santa Cruz,	Civil Eng.
Webster, John Columbus,	Stanford Univ.,	Education
Webster, Mary Ella Gray,	Stanford Univ.,	Psychology

Weinmann, Louis Randolph,	Alameda,	Law
Weitbrecht, Susan Greene,	St. Paul, Minn.,	History
Wellman, Anna Winifred,	Carlsbad,	Entomology Sp.
Wells, Albert Huntington,	Emeryville,	Chemistry
Wells, Edward Pomeroy,	Chicago, Ill.,	Law
Wells, George Rowley,	Santa Ana,	Civil Eng.
Wells, Laura,	Wailuku, T. H.,	English
Wenk, Morris,	Stockton,	Elec. Eng. Sp.
Wentz, Walter Yeeling,	San Diego,	English
Westwick, Robert,	Santa Barbara,	Civil Eng.
Weymouth, Frank Walter,	Tacoma, Wash.,	Zoology
Wheeler, Harry Raymond,	St. Louis, Mo.,	Law Sp.
White, John Blackwood,	Spokane, Wash.,	Law
White, Walter Noy,	Los Angeles,	Civil Eng. Sp.
Whitehead, Thomas Lenear,	Cedarville,	Elec. Eng.
Whiteman, Luther Herbert,	Crockett,	Chemistry
Whitemire, Ethel Dorothy,	San José,	Latin
Wight, Cynthia Titus,	San José,	English
Wilde, Herbert Russell,	Dobbs Ferry, N. Y.,	Elec. Eng.
Wildman, Floyd Alfred,	Cleveland, Ohio,	Geol. & Min.
Wilhelm, Frederick S.,	Portland, Ore.,	Law
Wilhelm, Victor H.,	Portland, Ore.,	Geol. & Min.
Wilkins, Helen Morse,	Bolinas,	English
Will, Roland Tracy,	Redlands,	Chemistry
Williams, Mary Wilhelmine,	Newman,	History
Williams, Tenney Davis,	San José,	English
Willoughby, Pearl Vivian,	Palo Alto,	History
Wilson, Anna Teer,	Worcester, N. Y.,	Zoology
Wilson, Emma Jean,	Los Angeles,	Latin
Wilson, Harriet L.,	Palo Alto,	Botany
Wilson, Horace S.,	Los Angeles,	Law
Wilson, Jessica Blythe,	San José,	History
Wilson, Julia Edna,	Palo Alto,	French
Wilson, Will Amos,	Muncie, Ind.,	Elec. Eng.
Wilson, William Webster,	Los Angeles,	Elec. Eng. Sp.
Wing, Wilson Gordon,	Corona,	Law
A. B., Yale University, 1903.		
Winslow, Mercelia Anna,	San Jacinto,	Drawing
Winslow, Ola Elizabeth,	Santa Clara,	English
Wintler, Clarence Henry,	Vancouver, Wash.,	Elec. Eng.
Wirt, William,	Santa Rosa,	History

Witmer, Roy Cook,	Pasadena,	Civil Eng.
Wolff, Marcus David,	San Francisco,	Economics <i>Sp.</i>
Womack, Robert Rae,	San Bernardino,	Mech. Eng. <i>Sp.</i>
Wood, Dallas England,	Merced,	English
Wood, John Graham,	Indianapolis, Ind.,	Mech. Eng.
Wood, John Shirley,	Little Rock, Ark.,	Chemistry
Woodard, John Daniel,	Yolo,	Law
Woodbury, James Sheldon,	Carson City, Nev.,	Geol. & Min.
Woods, Robert S.,	Los Angeles,	Elec. Eng.
Woods, Ruby Claire,	Palo Alto,	German
Worthington, Robert Strong,	San José,	Law <i>Sp.</i>
Wright, Elizabeth Agnes,	Plymouth, Mass.,	German
Wright, Hugh,	El Paso, Tex.,	Geol. & Min.
Wright, Neil Herbert,	Leonard, Tex.,	Law
A. B., Park College, 1905.		
Wyatt, Frank K.,	San Diego,	Elec. Eng. <i>Sp.</i>
Wyckoff, Harry Alphonso,	Palo Alto,	Physiology
Wynne, Edward Cyril,	San Francisco,	Law
Wynne, Estella Frances,	San Francisco,	English
Yamakawa, Shunzo,	Osaka, Japan,	English <i>Sp.</i>
Yantis, Frances A.,	Lewiston, Idaho,	History
Yasuda, John Katsukichi,	San Francisco,	Economics
Yocum, Eliza Hinchman,	Berea, Ky.,	English
A. B., Penn College, 1888, A. M., 1897.		
Yoder, Noah S.,	Palo Alto,	English
Yorke, Edwina,	Sacramento,	English
Yoshida, Kei-ich,	Fukuoka, Japan,	Elec. Eng.
Yost, Laurel Vane,	Redlands,	English
Young, Clarence R.,	Eureka,	Elec. Eng.
Young, Elmer Ellis,	Portland, Ore.,	Law
Young, John Arthur,	Colton,	Mechan. Eng.
Young, John Quigley,	Ft. Jones,	Physiology
Young, William Thomas,	Ft. Jones,	Physiology
Zimmerman, Fred,	Portland, Ore.,	Economics
Zirngiebel, Frank Winthrop,	Needham, Mass.,	History
Zoffman, George Fred,	San José,	Geol. and Min.
Zschokke, Irma Julia,	Palo Alto,	Economics
Kroeck, Louis Samuel,	San José,	Physiology
B. S., Univ. of Pacific, 1895; A. M. Stanford, 1897.		



## SUMMARIES

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### OFFICERS

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Candidates for Degree of Engineer.....	3	
Candidates for Degree of J. D.....	10	
Candidates for Degree of Ph. D.....	7	
Not Candidates for Advanced Degrees.....	60	
In Undergraduate Standing.....	16	118
UNDERGRADUATES .....		1535
SPECIAL STUDENTS .....		133
		<hr/>
Total .....		1786

## BY DEPARTMENTS

MAJOR SUBJECT	Graduate	Undergraduate	Special	Total	NO. STUDENTS TAKING WORK		SUM OF ALL CLASS LISTS	
					First Semester	Second Semester	First Semester	Second Semester
Greek.....	4	12	...	16	*267	*269	290	304
Latin.....	3	71	...	74	†306	†340	448	543
Germanic Languages...	5	94	2	101	470	373	686	587
Romanic Languages....	5	39	...	44	394	298	570	467
English.....	11	198	13	222	716	653	1140	1059
Biblical History.....	...	...	...	...	...	178	...	183
Philosophy.....	...	4	...	4	...	237	...	237
Psychology.....	1	6	...	7	165	199	176	219
Education.....	6	21	...	27	207	153	267	272
History.....	3	97	4	104	508	448	601	677
Economics.....	...	88	5	93	362	265	435	318
Law.....	19	251	38	308	156	150	505	499
Drawing.....	3	26	1	30	132	90	164	122
Mathematics.....	6	27	3	36	94	†240	126	268
Applied Mathematics...	...	...	...	...	395	317	536	475
Physics.....	3	7	1	11	169	128	177	139
Chemistry.....	10	93	4	107	396	280	599	522
Botany.....	1	20	1	22	113	74	118	81
Physiology.....	4	56	6	66	93	106	143	132
Hygiene.....	...	...	...	...	410	322	428	399
Zoology.....	4	26	2	32	129	92	151	104
Entomology.....	5	6	3	14	173	188	179	202
Geology.....	6	109	12	127	350	126	373	175
Engineering.....	...	...	...	...	280	186	416	195
Civil Engineering.....	...	122	16	138	80	114	91	128
Mechanical Engineering	1	67	8	76	294	263	410	437
Electrical Engineering...	2	111	14	127	76	35	120	64
Music.....	...	...	...	...	96	86	96	86

\* Including 180 first semester, and 200 second semester, in classes not requiring a knowledge of Greek.

† Including 199 first semester, and 233 second semester, in classes not requiring a knowledge of Latin.

† Including 150 taking the course in General Astronomy only.

## By RESIDENCE

California .....	1341	New Mexico .....	3
Oregon .....	48	North Dakota .....	3
Illinois .....	39	Connecticut .....	2
Washington .....	34	Georgia .....	2
Colorado .....	29	Michigan .....	2
Iowa .....	22	New Jersey .....	2
New York .....	21	North Carolina .....	2
Indiana .....	19	South Dakota .....	2
Montana .....	19	Tennessee .....	2
Utah .....	18	Vermont .....	2
Ohio .....	17	Maryland .....	1
Arizona .....	14	Mississippi .....	1
Hawaii .....	14	New Hampshire .....	1
Missouri .....	12	Oklahoma .....	1
Kansas .....	10	Rhode Island .....	1
Pennsylvania .....	10	Virginia .....	1
Idaho .....	8	West Virginia .....	1
Nebraska .....	8	Japan .....	16
Nevada .....	6	Mexico .....	9
Texas .....	6	Canada .....	5
Arkansas .....	5	Bermuda Islands .....	1
Massachusetts .....	5	Chile .....	1
Minnesota .....	5	Holland .....	1
Wisconsin .....	5	Portugal .....	1
District of Columbia...	4	New Zealand .....	1
Kentucky .....	3		

## CALIFORNIA BY COUNTIES

Alameda .....	42	Merced .....	5	Santa Clara...	500
Amador .....	1	Modoc .....	2	Santa Cruz...	16
Butte .....	6	Monterey .....	13	Shasta .....	3
Colusa .....	2	Napa .....	2	Solano .....	6
Contra Costa...	7	Orange .....	20	Sonoma .....	17
Del Norte ....	1	Placer .....	2	Siskiyou .....	5
Fresno .....	18	Riverside .....	33	Stanislaus ...	5
Humboldt ....	17	Sacramento ...	14	Sutter .....	3
Inyo .....	2	San Benito....	2	Tehama .....	1
Kern .....	11	San Bernardino	58	Trinity .....	1
Kings .....	1	San Diego....	42	Tulare .....	12
Lake .....	1	San Francisco.	138	Tuolumne ....	1
Los Angeles...	209	San Joaquin...	14	Ventura .....	6
Madera .....	1	San Luis Obispo	11	Yolo .....	10
Marin .....	8	San Mateo....	31	Yuba .....	3
Mendocino ....	16	Santa Barbara.	22		

## DEGREES CONFERRED

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May 24, 1905, \*September 8, 1905, †January 12, 1906

### BACHELORS OF ARTS

#### GREEK

Margueritte Alder	Frances Charles Pole
Hugh Anderson Moran	Beatrice Mae Wenger

#### LATIN

†Mary Bissell Cleary	Mabel McKibben
Wilbur Arthur Drake	Grace Elizabeth Monroe
Ellen Winifred Fitzgerald	Mary Frances Mulvihill
Lois Edna Garlinghouse	Aurora Matilda Peterson
Peter Homer Hammond	Alice Grace Stone
†Glen E. Huntsberger	Elizabeth Voris
Laura Ladd Lummis	
A. B., Lawrence Univ.	

#### GERMANIC LANGUAGES

Bessie Bell Applegate	Hattie Elsa Nobs
Paul Boehncke	Helena May Nye
†Blanche Bradshaw	Ph. B., Marietta Coll.
Carrie Lucia Coddington	Adelaide Jagger Peaslee
†Leon Gambetta Levy	Bernice C. Rowell
Glendora Elpha McCord	Minor Correll Sherwood

#### ROMANIC LANGUAGES

Mabel Helen Baum	Adelin Martin
Alice Jollyman	†William James Morin
Beatrice Lessey	

#### ENGLISH

Helen LaBaree Crandall	Jennet Johnson
Cassie Aleda Davidson	Katherine McIntyre
†Evangeline Singleton Gossett	Alice Marie Meyer
Fred Sanderson Holman	†Hazel Moore Patterson
†Grace Holt	Gertrude Catherine Peckham

Nora Elma Petree	Ruth Georgia Tarbell
Gertrude Ruth Pierce	George Milton Thiriot
A. B., Allegheny Coll.	Lenore Lorain Williams
Mary Ellen Rawdon	May Wolfley
Alice May Richards	Pansy May Woods
Helen Molyneaux Salisbury	Edith Mae Young
†Mary Rosalie Stolz	Ph. B., Cornell Coll.
Gertrude Esther Stroud	

## PHILOSOPHY

Augustine Jones

## EDUCATION

†Frances Haney Galloway	Taira Nakamura
Arden Barnes Handshy	Edwin Reagan Snyder
A. B., Albion Coll.	Robert A. Thompson
Delphus Leaton Jeffers	Masashi Yoshimi

## HISTORY

Louis Philip Bansbach	Beatrice Rebecca French
Lewis Henry Britton	Earl Chester Hazard
Delbert Brunton	Mabel Adelaide Hazlett
Christine Mary Burnap	Andrew Love Neff
Roy Walter Noble Ernest Cloud	Matilda Vance Newman
Helen Dorrance	Charlotte Paine
B. L., Mills College.	Charles Peach
Ernest Hawley Duval	Bertha Amelia Peaslee
Mary Elizabeth Evans	Ida Mae Peterson
A. B., Nevada State Univ.	William Henry Thomson

## ECONOMICS AND SOCIAL SCIENCE

Laura Chapin Bailey	Matthew Etsutaro Iriya
Richardson Damon Barrett	Julien Josephson
Irvin J. Bounds	†Robert Hitt Newcomer
Arthur Willard Hooper	†Ruth Estelle Seadler

## LAW

Raymond Griffin Barnett	†Benjamin Clifford Dey
Leo Daniel Byrne	Arthur McQueen Dibble
Winfred Buford Chandler	Eugene Barkley Favre
Thomas More Coen	Frederick John Fraser
William Russell Cole	Phillip K. Funke
†William Clarence Day	Oscar Gibbons

Louis Gonsalves	Donald Kingsland Seibert
Lucius Peyton Green	True Van Sickle
Earl Lamb	Philip David Swing
De Lancey Lewis	George M. Thomas
Edgar Augustine Luce	Claire Wyman Ward
Clarence Tryon Manwaring	Frederick Prescott Whitaker
Earl Everett Miller	Carl Butler Wintler
Morris Oppenheim	

## DRAWING

Estella Pearl Carter	†Anna Reinhart
Otis Edwin Hyde	Mary Ada Rose
†Enid Kinney	

## MATHEMATICS

Edith Anne Anthony	Nellie Caroline Muller
Ada Howard Boyd	Manville Hewitt Sprague
Martha Arichbald Foss	Edith Mary Tebbetts
†Ruth Bailey Gregg	A. B., Whittier Coll.

## PHYSICS

Helen Louise Darby

## CHEMISTRY

Reginald Austin	†Dane M. Greer
Paul W. Avery	†Louise McDanell
Martha Jane Brown	B. S., Univ. of Nashville.
Jennie Alice Comings	Henry Schuyler Montgomery
†William Elmer Crawford	Joy Morden Nims
Fred Finley Fitzgerald	†Henry Ennis Savage
†John Moody Foster	†William McConnell Shearer
George Edwin Gamble	

## BOTANY

Lydia Mae Tripp Wood

## PHYSIOLOGY AND HISTOLOGY

Ross Stagg Carter	George Dunlap Lyman
Diantha May Haynes	Maud May Sears
A. B., Throop Polytechnic Inst.	Harold Heber Smith
Clarence Elmer Hyde	Victor Eyttinge Stork
Oswald Swinney Lousley	Hazel Adah Traphagen

## ZOOLOGY

Gertrude Knapp	†Edna Mary Reeves
†Georgia Denne Pitman	*Alvin Seale
Mabel Clara Ray	*Charles Sidney Thompson

## ENTOMOLOGY AND BIONOMICS

\*Luella May Bremner

## GEOLOGY AND MINING

Norman Blythe Braly	Hector Cowan McNaught
†William Otterbein Clark	*Frederick William Nobs
A. B., Union Christian Coll.	*Ernest Younger Pomeroy
†Edgar Miller Gleim	Archibald Edward Preston
Harry Clay Grigsby	†George Richards Stevens
William Henry Lanagan	Gerald Ashley Waring
Andrew Hilliard Lett	Arden Martin Wilson
Robert Strong Lewis	

## CIVIL ENGINEERING

Charles Delaplane Atterbury	Everett Hamilton Hatch
James Gordon Dehy	George Merrick Herron
Edgar Willis Doane	John Johnson Monzingo
B. S., Kansas State Agr. Coll.	Grant Hathaway Moore
Frederick Hall Fowler	Alfred Lockwood Trowbridge

## MECHANICAL ENGINEERING

William Douglas Carter	Josiah Philip O'Neal
Henry John Colberg	Oran Adrian Petree
Clarence Burwell Eaton	Arthur Bertram Saunders
Alfred Weed Gordon	†Lawrence Herring Seargeant
William Wheeler Henley	Oscar Werner

## ELECTRICAL ENGINEERING

Lewis G. Burr	Samuel Caldwell Haver, Jr.
Hayden Gearhart Butterfield	John Hynes McDougal
James Watt Coons	Arlin D. Miller
Gordon William Edwards	Joseph Mini, Jr.
Charles Guthrie Fulton	Frank William Peek, Jr.
Ray Alexander Gulick	Samuel Payne Reed, Jr.
William Smith Guthrie	Harvey Shields
Frank Bacon Hathaway	

## BACHELORS OF LAWS

William Elbridge Billings, A. B.	Ralph Clinton McComish, A. B.
Andrew Arthur Caldwell	Hall Carlos Ross, A. B.
Webster Guy Heinly	*George Springmeyer, A. B.
B. S., Knox Coll.	Charles William Weiser
Harvey McCaslin, A. B.	Ph. B., Colorado Coll.

## MASTERS OF ARTS

## LATIN

*Lillie E. V. Lloyd	Mary Eva Orcutt
A. B., University of Toronto.	A. B., University of California.

## GERMANIC LANGUAGES

Lena Mignon Abel	Emelie Caroline Keiser, A. B.
A. B., Univ. of Kansas.	Laura Ingeborg Nagel, A. B.

## ROMANIC LANGUAGES

Stanley Smith, A. B.

## ENGLISH

†Anna Pearl Cooper	Marjorie Evelyn Waxham
A. B., Colorado Coll.	A. B., Wellesley Coll.

## PSYCHOLOGY

John Edgar Coover, A. B.	George Snow Gibbs, A. B.
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## HISTORY

Charlotte Mabel Lord, A. B.

## ECONOMICS AND SOCIAL SCIENCE

Fred Wilbur Powell, A. B.

## CHEMISTRY

Ethel Winona Graves, A. B.	Ralph Harrison Sherry, A. B.
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## BOTANY

Albert William Christian Theodore Herre, A. B.

## ZOOLOGY

Mary Ruhama Cravens, A. B.	Clayton Franklin Palmer
	B. S., Boston University.

## ENTOMOLOGY AND BIONOMICS

*George Albert Coleman, A. B.	Mary Isabel McCracken, A. B.
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## ENGINEER

## CHEMICAL ENGINEERING

Norman Eliot Dole, A. B.



# ALUMNI ASSOCIATION

Organized June 15, 1892

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## CONSTITUTION

In order to promote the interests of the University, to secure unity among its graduates, and to foster an attachment to our *Alma Mater*, we do hereby constitute ourselves an association to be known as the Alumni Association of the Leland Stanford Junior University.

### I. Membership

1. All persons who have received a degree from the Leland Stanford Junior University are members of this Association.
2. All members of the Faculty are honorary members of this Association.

### II. Officers

The officers of this Association shall be: (1) a President; (2) one Vice-President from each successive group of five classes (provided that when the last group shall number three classes it shall thereafter be entitled to a Vice-President); (3) a Secretary-Treasurer.

### III. Duties of Officers

1. It shall be the duty of the President to preside at all business meetings of the Association, to deliver the President's address on Alumni Day, and to perform such other duties as usually belong to his office.
2. It shall be the duty of the Vice-Presidents, in the order of seniority of their groups, to preside in the absence of the President and to perform the other duties belonging to his office.
3. It shall be the duty of the Secretary-Treasurer to keep accurate minutes of the meetings of the Association and to act as Secretary of the Executive Committee, of which he shall be a member.
4. It shall also be the duty of the Secretary-Treasurer to have charge of the collection and disbursement of the funds of the Association.

5. The Secretary-Treasurer shall be allowed ten per cent of all dues or assessments collected, as compensation for his services.

#### IV. Committees

1. There shall be an Executive Committee consisting of the following persons: The Secretary-Treasurer of the Association, and three other persons chosen by the Association, one of whom shall be designated as Chairman of the Committee.

2. The President shall be ex-officio a member of all Committees.

3. At each annual business meeting the President shall appoint a committee of two persons to audit the Treasurer's accounts.

#### V. Duties of Committees

It shall be the duty of the Executive Committee to arrange for the literary programme to be presented on Alumni Day; or any programme for other public occasions; to regulate the finances of the Association; to perform such other duties as may be imposed upon it; and to attend to all business of the Association not otherwise provided for.

#### VI. Elections

1. The Officers of the Alumni Association shall be elected by ballot, a majority of all votes cast being necessary for election.

2. The Executive Committee shall be elected by ballot, a majority of all votes cast being necessary for election.

3. The election of officers and of the Executive Committee shall be held on Alumni Day at the annual business meeting.

#### VII. Dues

1. The dues of the Association shall be one dollar per year for each member thereof. This amount, however, may be changed by a majority vote at any annual business meeting of the Association.

2. Dues shall be collected from each member of the Association until he has made five annual payments.

#### VIII. Amendments

Any proposition to alter or amend these Articles of Association must be made at a regular meeting, and have the assent of two-thirds of the members present.

OFFICERS FOR 1905-06

President:—DENNIS SEARLES, '95.

Vice-Presidents:—SCOTT CALHOUN, '95; CHESTER GRIFFIN MURPHY, '00, LL. B., '03; ETHEL HILDA FOSTER, '04.

Secretary-Treasurer:—CHARLES FREDERICK WRIGHT, '96, A. M., '97.

Executive Committee:—RAY LYMAN WILBUR, '96, A. M., '97, Chairman; SAMUEL WILSON COLLINS, '95, A. M., '96; THOMAS MARION WILLIAMS, '97; CHARLES FREDERICK WRIGHT, '96, A. M., '97; DENNIS SEARLES, '95.

## DIRECTORY OF OFFICERS

Members of the Academic Council are indicated by small caps. The dagger (†) marks the names of men who are married. The numbers at the right refer to pages where further information may be found.

†ABBOTT, N.,	.....11, 118-116	†Clark, G. Archibald,	..... 14
†ADAMS, E. D.,	.....14, 106-110	†Clark, W. O.,	.....144, 145
†ALDEN, R. M.,	.....16, 95-100	†Clevenger, G. H.,	.....21, 144-147
ALLARDICE, R. E.,	.....11, 118-121	Coleman, E. H.,	.....25, 138
Allen, C. G.,	.....21, 90-92	Cooper, (Miss) A. P.,	.....23, 95-100
†ANDERSON, M. B.,	.....9, 95-100	†COOPER, W. A.,	.....16, 86-88
†ANGELL, F.,	.....10, 102	Cowan, J. F.,	.....22, 133-136
Atherton, (Miss) C. F.,	..... 26	†Cox, A. J.,	.....20, 125-127
Avery, P. W.,	.....24, 125, 128	Crandall, (Miss) E.,	..... 23
Barcus, J. F.,	..... 27	Crawford, W. E.,	.....24, 125
Barnett, G. D.,	.....24, 125, 127	Crosier, (Miss) M. T.,	..... 27
†BASSETT, L. E.,	.....19, 57, 95-96	†CUBBERLEY, E. P.,	.....13, 103-105
Bateman, W. G.,	.....24, 125, 127	Curtis, K. L.,	.....21, 155-157
BLICHFELDT, H. F.,	.....16, 118-120	Cutter, L. E.,	.....25, 149, 150
†Blodgett, B. C.,	.....27, 160, 161	Dearing, H. L.,	..... 27
Boalt, G. D.,	..... 27	Dennis, S. J.,	.....21, 153
Bolton, (Miss) F.,	.....25, 138-140	†Doane, R. W.,	.....22, 143
Bonnell, J. K.,	.....21, 95	†DODGE, M. G.,	.....14, 158, 159
†BRANNER, J. C.,	.....9, 144-147	Dole, G. E.,	..... 27
Brew, H.,	.....25, 150	†Drew, E. R.,	.....19, 123, 124
Bristol, (Miss) S. B.,	..... 26	Duby, (Miss) M. C.,	.....23, 90
†Brown, C. R.,	.....16, 100, 101	DUDLEY, W. R.,	.....11, 132, 133
Brown, (Mrs.) G. N.,	.....24, 123	†DUNIWAY, C. A.,	.....14, 106-110, 116
†Brown, J. G.,	.....20, 123	†DURAND, W. F.,	.....12, 153-155
Brown, T. G.,	.....24, 121	Earle, H. P.,	.....22, 90
†BROWNE, A. A.,	.....17, 153	†Eckart, W. R., Jr.,	.....18, 153-155
Bruckman, (Miss) G. H.,	.....123	†ELLIOTT, O. L.,	..... 12
Burbank, L.,	..... 19	†ELMORE, J.,	.....17, 79, 82-86
Burke, W. E.,	.....24, 125	†FAIRCLOUGH, H. R.,	.....12, 79, 82-86
Burr, M. C.,	.....25, 150	FARRAND, M.,	.....12, 106-109
du Buy, J.,	.....23, 86-88, 101	†FISH, J. C. L.,	.....13, 150
Byxbee, J. F., Jr.,	.....25, 150	Fisher, W. K.,	.....22, 140
CAMPBELL, D. H.,	.....10, 130, 131	Fitzgerald, F. F.,	.....24, 125, 127
†CANNON, H. L.,	.....18, 106-109	FLÜGEL, E.,	.....10, 100
Carter, L. L.,	.....25, 150	†FOSTER, B. O.,	.....18, 79, 82-85
†Cathcart, A. M.,	.....21, 113-116	†FRANKLIN, E. C.,	.....15, 125-128
†Chappel, H. W.,	.....20, 138, 139	French, (Miss) R. B.,	.....23, 103
Charters, S. B., Jr.,	.....21, 155-157	Fullaway, D. T.,	..... 25
†CLARK, A. B.,	.....13, 117-118	Fuller, R. A.,	.....24, 121
†Clark, G. Albert	.....24, 123	†Gardner, D. C.,	.....15, 100, 101, 160

- †GILBERT, C. H., ...10, 140-142, 170  
 †Goodwin, J. E., .....26, 158  
 †Gray, H. D., .....22, 95-100  
 Green, (Miss) L. P., .....26, 158  
 †GREEN, R. L., .....11, 118-120  
 Greer, D. M., .....24, 125, 127  
 †GRIFFIN, J. O., .....11, 86, 88  
 Hadden, (Miss) E., .....27  
 Hall, (Miss) A. G., .....27  
 Hall, H. H., .....22, 150  
 †Hall, H. J., .....19, 95-96  
 Haven, (Miss) M. E., ....26, 158  
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 †HEATE, H., .....15, 140, 141  
 Hemphill, J. P., .....25  
 †HEMPL, G., .....13, 86-88  
 Hodge, G. A., .....25, 148, 150  
 †Hodges, C. E., .....28  
 †Hodges, G., .....19, 100, 101  
 Hohfeld, W. N., .....22, 118-116  
 Holman, R. M., .....24  
 †HOSKINS, L. M., 10, 121, 122, 149, 150  
 †Huberich, C. H., .....19, 118-116  
 Hudson, R. A., ....25, 153, 154  
 Hughes, (Miss) F., .....26, 158  
 †Humphrey, H. B., ....22, 132, 171  
 Humphrey, (Mrs.) O. A., ....24  
 †JAMES, W., .....13, 101  
 †JENKINS, O. P., ....9, 133-136, 170  
 Johnson, (Miss) J., .....23, 95  
 †JOHNSTON, O. M., .....14, 90-94  
 †JORDAN, D. S., .....9, 143  
 Kellogg, R. S., .....144  
 KELLOGG, V. L., .....12, 143, 144  
 Kocher, A. L., .....27  
 Lanktree, (Mrs.) L. P., .....27  
 †Lathrop, C. G., .....28  
 Lawson, A. A., .....20, 130, 131  
 †LENOX, L. R., .....12, 125-128  
 Lessey, (Miss) B., .....23, 90  
 Lewis, L. P., .....22, 118-116  
 †Liggett, J. B., .....20, 153  
 LYON, D. A., .....18, 144-147  
 McCracken, (Miss) M. I., ..22, 143  
 McDowell, J. E., .....20  
 †McFARLAND, F. M., ..13, 133-136, 170, 171  
 †McLEAN, S. J., .....15, 110-112  
 McMurphy, J. I. W., .....24  
 Manning, W. A., ....21, 121, 122  
 †Martin, E. W., .....20, 79, 82-86  
 MARTIN, (Miss) L. J., ....16, 102  
 †MARX, C. D., .....10, 150-153  
 †MARX, G. H., .....13, 153-154  
 Matzke, (Mrs.) E. H., .....25  
 †MATZKE, J. E., .....11, 90-94  
 Mayreis, L. J., ....25, 148, 150  
 Meyer, (Miss) A., .....23  
 Miles, (Miss) H., .....26, 158  
 MILLER, G. A., .....15, 118-121  
 †Millis, H. A., .....17, 110-112  
 Mirrielees, (Miss) E. K., ..23, 95  
 †Mitchell, J. P., .....22, 125, 127  
 Moran, R. B., .....150  
 MORENO, H. C., .....18, 121, 122  
 Moser, S., .....149, 150  
 †MURRAY, A. T., .....11, 79-82  
 †NEWCOMER, A. G., .....13, 95-99  
 †NEWSOM, J. F., .....14, 144-147  
 Nobs, F. W., .....144, 145  
 †NOYES, G. L., .....17, 117  
 †Palmateer, T., .....21, 153  
 Park, R. N., .....144, 145  
 Patterson, (Miss) L., .....27  
 Patterson, (Miss) R. W., ....25  
 Paxton, C. H., .....24, 121  
 Peck, C. L., .....149, 150  
 †PEIRCE, G. J., .....14, 130, 131  
 †Peterson, H. C., .....27, 172  
 †Peterson, J. E., .....20, 153  
 Phillips, C., .....23, 86-88  
 †PRICE, G. C., 13, 140, 141, 170, 171  
 Price, J. M., .....125, 127  
 Putnam, E. K., .....20, 95-100  
 †Ranum, A., .....24, 121  
 †RENDTORFF, K. G., .....16, 86-88  
 Reppy, R. V., .....21, 113  
 Rittenhouse, E. C., .....27  
 †Rogers, A. F., .....19  
 †ROGERS, F. J., .....16, 123, 124  
 †ROLFE, H. W., .....15, 79-82  
 Roop, W. P., .....24, 123  
 Rossiter, (Miss) M., .....27  
 Russell, (Mrs.) T. P., ....23, 101  
 †RYAN, H. J., .....12, 155-157  
 †SANFORD, F., .....10, 123, 124  
 Schmutzler, C. F., .....20, 86-88  
 †SEARLES, C., .....16, 90-92  
 Seibert, D. K., .....23  
 SEWARD, S. S., Jr., ....18, 95-100  
 Shelton, W. C., .....23

†SHOW, A. B., .....11, 106-109	Stolz, (Miss) M. R., .....25, 138
Shutts, F. O., .....25, 150	†STOREY, T. A., .....17, 138, 139
Sindo, M., .....24, 133	Strong, H. W., .....25, 138
†Skinner, M. M., .....19, 86-88	Strout, G. S., .....25, 149, 150
†Slonaker, J. R., .....17, 133-136	Sutliff, (Miss) H., .....26, 158
Smith, C. P., .....25	SUZZALLO, H., .....19, 103-105
†SMITH, J. P., .....12, 144-147	†SWAIN, R. E., .....17, 125-128
Smith, S., .....21, 90-92	Theille, W. C., .....25
†SNEDDEN, D. S., .....17, 103-105	Thomas, H. R., .....24, 121
†SNOW, W. F., .....16, 138, 139	Thompson, (Miss) B. H., 26, 158
†SNYDER, J. O., .....17, 140, 141	Thompson, S. B., .....27
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